YOUR COMPUTER

INCORPORATING ST UPDATE

DECEMBER 1987

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ST Update

ORGANISE YOUR CHRISTMAS ...

P-P-PICK UP A PORTABLE

PCW DESKTOP PUBLISHING

Z88 ON THE ROAD

EAZY PC — A RIVAL FOR AMSTRAD?

WARGAMES AT ELECTRONIC ARTS



100-PAGE ISSUE

NEW AMIG
NOW OTHER HOME COMPU

Amiga 500 is here.

With a mind-blowing array of features and capabilities.

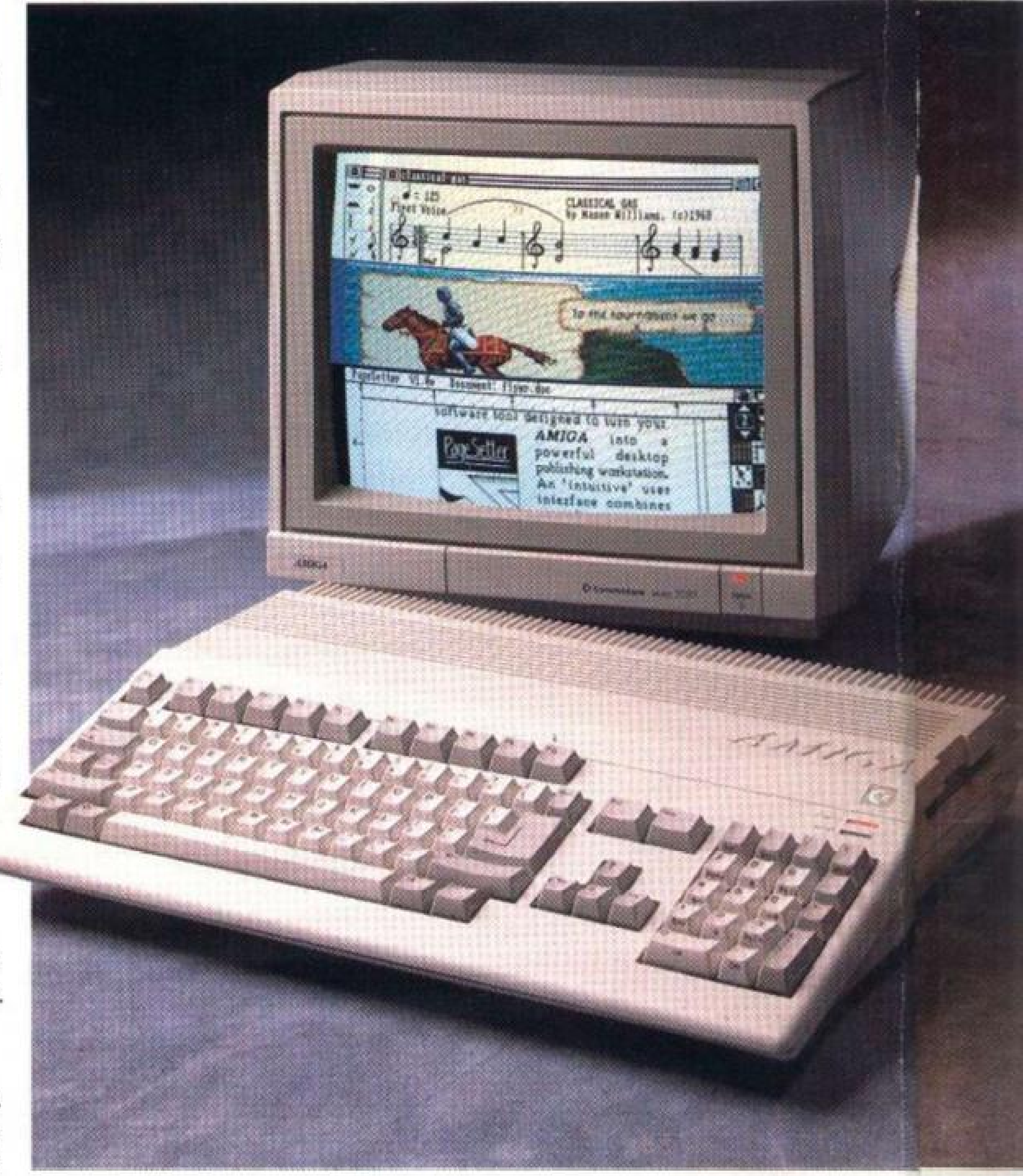
And a £499.99‡ price ticket (inc. VAT), hundreds of pounds less than anyone could have predicted.

"...a miracle of compression..." writes *Popular Computing Weekly** "...it all adds up to a formidable system which is clearly better than anything else at the price."

This elegant little machine takes family computing into new dimensions of creativity, excitement and productivity.

It outruns and outguns office PCs as a business multi-tasker, performing a deskful of different jobs simultaneously, at over 7 million steps per second in realtime.

So other home computers may not be the only machines it consigns to the toy cupboard.



AMAZING SCIENCE FACT.

Amiga is used by Disney, Universal and other Hollywood studios for its dazzling 3D graphics manipulation and animation powers.

A sophisticated high-speed graphics processor called a blitter chip transforms images in realtime.

You can paint the screen with more than 4,000 colours. Create and modify designs and effects as you like, with pin-sharp resolution.

You command an almost limitless workshopful of stunning professional graphics capabilities.

With an optional Genlock interface, you can capture images off videotape. Manipulate and mix them with graphics. Then re-transfer them to videotape!

This means you can produce spectacular special effects like those created by Amiga computers for Channel 4's *Chart Show* and the American TV science fiction series *Amazing Stories*.

YOU AIN'T HEARD NOTHING YET

Concealed within the sleek Amiga shape, there is also a pro-quality sound synthesiser and four-track stereo sound system.

Driven by another powerful and unique custom chip, it can synthesise musical instruments an

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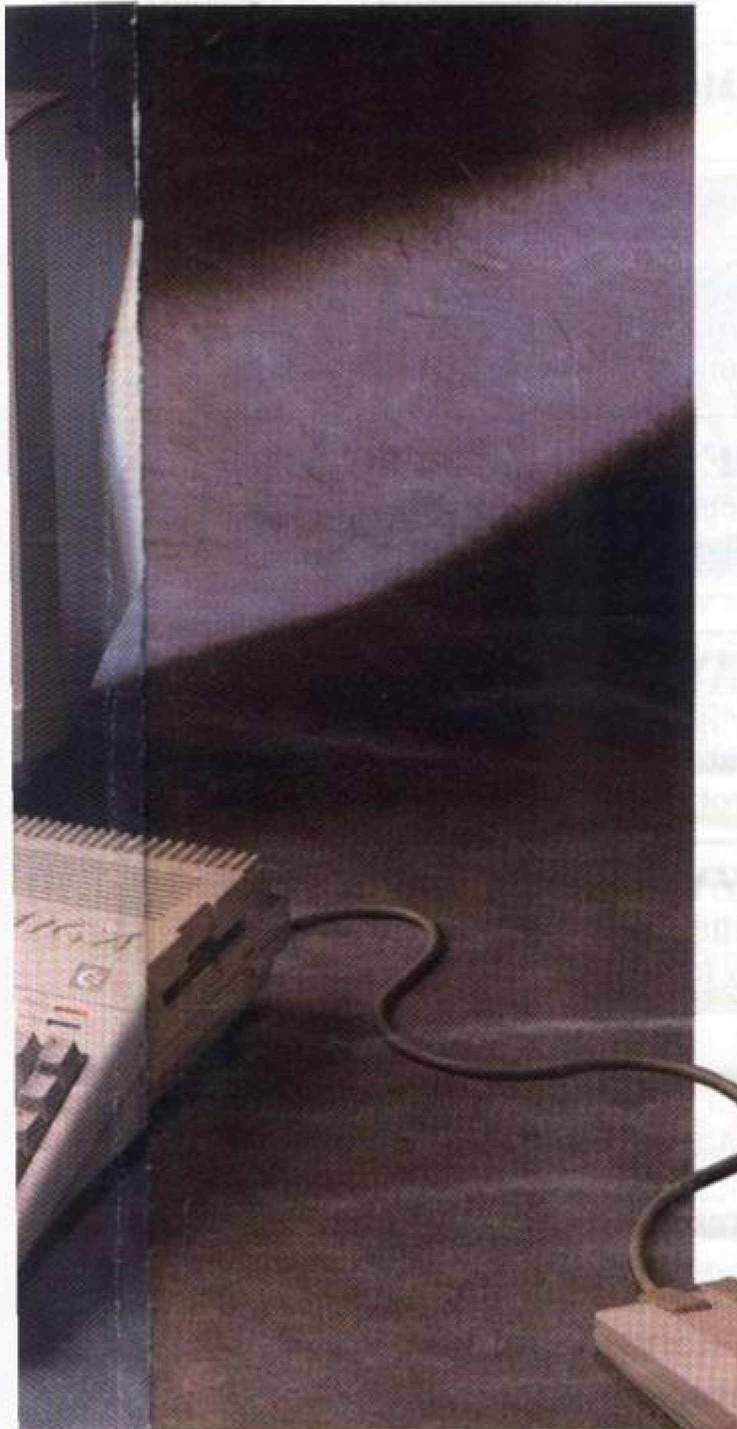
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‡ Includes DeluxePaint from Electronic Arts worth £79 + VAT! (Excludes monitor or TV modulator.)

*Popular C

MIGA 500.
MPUTERS ARE JUST TOYS.



Your Amiga can also synthesise the human voice.

It can speak back anything you care to write on the keyboard.

So this is one computer that can not only word process with faultless professionalism, and incorporate superlative graphics into the text, it can also read the text back to you aloud.

GAMESMANSHIP AND WORKMANSHIP!

The new Amiga 500, in fact, dumbfounds its competitors in every way.

Graphics, stereo sound, multi windowing, multi screens, 512K to 1Mb RAM (expandable by an incredible 8 further megabytes externally**), 3½" internal disk drive with 880K of mass memory, 4 unique dedicated chips plus the 16/32-bit power and 7.14MHz speed of its central processor, communications and vast expansion potential all add up to a computer of immense professional capability.

Yet the same technology allows the Amiga 500 to play games so mind bending that only full-scale arcade machines have been able to play them until now.

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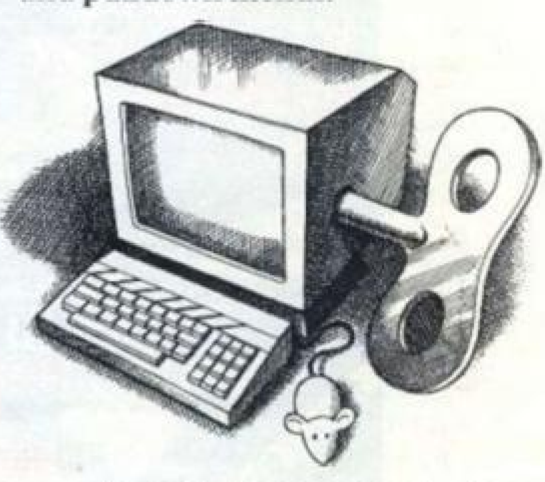
sound effects.

An optional digitiser allows you to take onboard real sounds. Mix and modify the two. Translate your compositions from keyboard to sheet music. Play them back through the monitor's speaker or your hi-fi.

AND AMIGA MEANS 'FRIEND'!

However many of the Amiga's extraordinary talents you find yourself using, they will all be beautifully simple and natural.

You will be totally at home in the friendly and effortless Amiga environment, where everything happens by windows, icons, mouse and pulldown menus.



And the Amiga 500 simplifies life in another way too.

There is now no comparable home computer. At any price.

INCREDIBLY ONLY £499.99: INCLUDING VAT

Try the astonishing new Amiga 500 at your nearest Commodore Amiga dealer.

And discover why *Personal Computer World*†, having tested the graphics performance of Amiga's latest and most powerful rival, concluded "...Amiga still reigns supreme..."



* *Popular Computing Weekly*, 22-28 May 1987. †*Personal Computer World*, February 1987. ** *Subject to availability.*

contents

DECEMBER 1987

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Back issues of the magazine from January 1986 onwards are available for £2.00 (U.K.), £2.75 (Overseas) from the Back Issues Department, Greencoat House, Francis Street, London SW1P 1DG.

FEATURES



SOFTWARE TOOLKIT

NEXT MONTH

In your next Coronation Street-starring edition of Your Computer is an in-depth examination of the latest developments in computer graphics. We pay a visit to Virgin HQ to find out Richard Branson's major plans for computer entertainment and Mike Gerrard meets the games-testers, the people who decide which games you are going to be playing. On sale December 10th.



COMMENT

This month, Your Computer joins forces with ST Update to form a new, brighter magazine for the sophisticated home-user. The future of home computing is in 16-bit machines and Your Computer fully intends to be the magazine for this market. Whether you own an Atari ST, a Commodore Amiga or a PC compatible, this is the journal you will want to read for all the latest information, advice and reviews of hardware and software, both serious and entertaining.

None of this means that we will be neglecting 8-bit users either. This month, for instance, there are features on software for the Amstrad PCW and the Commodore 64.

We are also going to be the first to bring you news on the machines of the future. At present we are excited by the new RISC technology and so we have two Acorn Archimedes software reviews in this month's issue. With technological developlments in CD-ROM and transputers, it seems that the months ahead will be full of many interesting developments. Your Computer is going to take you there. Watch this space!

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YOUR COMPUTER NEWS



● *Dick Special*, **the first fully animated computer game ever.**



● ***Time and Magik*** **brings together three popular Level 9 adventures.**

Dick turns out to be something very special

Sandy White and Angela Sutherland's long-awaited project proved to be well worth the wait when unveiled at the PCW show. The cartoon graphics of *Dick Special* (see Rainbird article, October *YC*), the first ever fully-animated computer character, really have to be seen to be believed. White and Sutherland again seem to be years ahead of their time, just as they were with *Ant Attack* in 1983. Dick will be up in the shops for Christmas.

Other games imminent from Rainbird are *Carrier Command and Universal Military Simulator*, both due any day now. The release date of Level 9's three-part *Time and Magik* is no more specific than the next couple of months" but Level 9 won't mind since it is on the point of releasing under its own auspices a game called *Gnome Ranger*. This is also a three-parter, featuring a lead character called Ingrid Bottomlow, apparently a thick-skinned gnome.

The other major Rainbird game before the end of the year is *Jinxter*, the latest effort from Magnetic Scrolls. The graphics are even more beautiful than those used in *The Pawn*. As an adventure, it is rather easier, if only because the player can't die. Next month's Adventure Playground will contain a full-length feature on Magnetic Scrolls and the new game.



● ***Jinxter*** **is the latest in the train of successes from Magnetic Scrolls.**

Wafer thin backing

After a wait of several months, Sir Clive Sinclair has managed to raise the necessary capital of £2.8 million for his wafer scale integration project. project.

The initial backing came 18 months ago when Barclays Bank put a large sum into Anamartic, the subsidiary of Sinclair Research. Subsequent sponsorship has now been bestowed by Tandem, a U.S. computer company which is believed to have stumped up something in the region of the £1 million for Sir Clive. Other investors are the Italian firm SGS Microelettronica and British companies Baronsmead, Advent and Murray Technology Investments. This financial vote of confidence for Sir Clive would indicate that his backers have more faith in him than in Amdahl which allegedly spent £150 million before giving up on the idea.

Dutch computer company muscles in on Tandon and Zenith

Dutch company Tulip Computers attempted its third entry to the U.K. market with a launch during the PCW Show. Billing itself as the second biggest computer company in Benelux, Tulip has been trying for some time to get into the U.K. but has found it difficult because we are, apparently, a 'price-sensitive market'.

With the specific aim of dominating the Tandon/Zenith sector, Tulip has launched initially an 8088 PC, a 10 MHz AT and a 16 MHz AT 386. Journalists were treated to a fuzzy video of the new computers, the slogan from the commentator being "Products that offer you clarity in every respect".



● **Tulip Computers – are they a Dutch too much?**

Epson clone attack

The more optimistic members of the press may have hoped for a 286 machine or a laser printer, but in the end the one new Amstrad product launched at PCW was a 24-pin dot matrix printer.

Priced at £401 (inclusive of VAT for once), the *LQ 3500* is another Amstrad product which looks set to clean up its market. Comparisons may be odorous, but it will inevitably be measured against current market leader Epson. It could be that the LQ 3500 will prompt the introduction of the 24-pin printer into the home office but business people may well stay with the firm they know best. Another challenge to Epson has been made by Citizen. The *Citizen LSP100* is a nine-pin dot matrix printer which has been produced specifically to compete with the *Epson LX800.* Buying from Citizen will cost you £245, from its deadly rival £275. The only problem with the Citizen game-plan, as its strategists would have discovered if they had read the November *YC*, is that Epson is shortly to replace the LX 800 with a superior machine for exactly the same price . . .



● **The Citizen LSP100 – built to rival the already-obsolete Epson LX800.**

Barbarian a 'threat to youth' decides German government

The feathers of Palace MD Peter Stone did not seem too ruffled at the PCW show, despite the news that the controversial *Barbarian* is to be banned in Germany. A government department called the *Bundesprufstelle fur Jungendgefahrdende Schriften* (literally translated as 'a foaming litre of Stella please, mine genial host') has decided that the decapitations and realistic sound effects of people being whacked in the solar plexus might well incite German youth to similar acts of violence.

With the game restricted to display in places where no-one under the age of 18 will see it, this effectively means that Barbarian will only be on sale in sex shops.

Peter Stone told *YC* that the ban did not come as a shock knowing the German predilection for making computer games *verboten.* "I don't agree with their point," he says. "Kids like violent things but it doesn't make them go lopping heads off in real life."

Nevertheless, it could be that Palace has taken some notice of the controversy. *Barbarian II* will feature monsters as adversaries rather than humans as found in the original.

Archimedes down

Acorn has cut the price of the Archimedes, British Micro Awards Home/Business Micro of the Year (we assume they mean next year) by £100. This brings the mono monitor version down to an eye-watering £749 plus VAT. Maybe they mean the next year . . .

Adventure in deepest Sutton

After the success of last year's Adventure '86, an even larger event is to be held this year on November 28th at Sutton Central Library in Sutton, Surrey.

Seminars and a hands-on workshp will take place throughout the day. Among the speakers will be Peter Kilworth, the great unsung hero of BBC adenture writing and Tim Gilbert from Gilsoft.

Tickets for the event, which starts at 9.30 a.m. and finishes at 5.30 p.m., will cost £2.50 on the door or £2.00 if purchased in advance from Mr. D. Wilkins, 21 Village Road, Sutton, Surrey SM2 6JZ.

THE NEW SINCLAIR HAS ONE BIG DISK- A



THE SINCLAIR ZX SPECTRUM +3 WITH 6 FREE GAMES AND A JOYSTICK.

Amstrad makes plans to build its burgeoning foreign empire



The excitement about Amstrad could all be overseas for the next year, if the company's statements about a year of consolidation are to be believed. Alan Sugar, probably rightly, believes that he has mopped up the vast majority of micro buyers he can get to in the UK, and proposes to do likewise in the rest of the world.

The first phase of the battle here is already under way, and in the last few months he has added Amstrad subsidiaries in Italy, Spain and the United States to the company's books. The new US subsidiary is his distributor Vidco, which he bought out in September for $7.5 million, while in Spain the willing victim was Indescomp, which at 21.6 million checks in at quadruple what he paid for the Sinclair machines.

Indescomp is something of a rare beast. It is a foreign micro distributor end users here have actually heard of. It's got more of a track record than a lot of the companies in the UK, and should be able to keep the Iberian peninsula well sewn up for Amstrad.

But there's one key territory missing from the portfolio – Germany. This was one of the first overseas territories Amstrad got into, as part of a joint venture with German company Schneider which puts its own badge on Amstrad's machines. The arrangement has been profitable for both, but Amstrad wants control of its distribution and Schneider wants to sell a new generation of machines. The two are going to break up next May.

Before then, Amstrad will have to have a German subsidiary up and running, and that operation will have to be good enough to take on Atari, Commodore and Schneider, all of whom are battling to make Germany "their turf'. The turf in question is obviously worth a lot – there are about as many Germans as there are British, and the Germans are a lot richer. And it's even possible that we could be seeing new Schneider machines coming back into this country sometime next year.

Win some . . .

Visitors to the PCW Show will know about the sweat, but there's usually blood and tears as well. This year's effort inlcuded an interesting piece of knife-fighting from BT Telecomsoft which, having failed to launch *Star Trek* two years in a row (not a record, unfortunately) and still having some bugs to sort out of PC *Elite*, decided to swipe Hewson's Christmas launches instead. The launches in question were Morpheus and Magnetron from top programmers Andrew Braybrook and Steve Turner, who wrote Uridium and Quazatron respectively.

Braybrook and Turner had nearly finished the games for Hewson, but decided to sign up with Telecomsoft after persuasion with a funny L on the front and several zeroes on the end. Unhappily for Andrew Hewson, they don't seem to have had a written contract with him, so propose to take the games with them. Nice to know Telecomsoft can still spot winners – now all they've got to do is learn to spot them before they get horribly expensive.

. . . lose some

It's difficult to think off-hand of a game he's actually been around long enough to launch, but Francis Lee remains one of the most desperately creative (or maybe just desperate) people in the games industry. While he was at Telecomsoft he started work on the Star Trek project, and while this isn't altogether the sort of thing everyone would want on their CV the fact that Telecomsoft has now spent more time making a mess of it without Lee than it did with Lee indicates that it wasn't all his fault.

Next stop for Francis was Starlight, a label he founded to operate in conjunction with Ariolasoft, pausing long enough to sign up a couple of good games and get the T-shirts printed.

The latest label, Destiny, could however be the big one. This time round Lee has teamed up with Activision, and as part of his dowry he's bringing Mike Singleton.

Singleton is the genius who wrote the perspective graphics system used in *Lords of Midnight* who headed up the initial programming team for Star Trek and who wrote *Lord of the Rings* for Melbourne House (not that one – the good one). He'll be working on a number of so far unspecified projects for Destiny, but one of them could well be the third part of the Lords of Midnight trilogy. This should have come out under the Beyond label two years ago, but never actually got written. Beyond was taken over by Telecomsoft, which has the rights to the first two parts, but (savour this, Andrew Hewson) Telecomsoft never actually signed Singleton to do part three, and after the Star Trek fiasco a Singleton/ Telecomsoft deal is about as likely as a Gary Hart presidency.

Back up band

On sale until Christmas is the software industry's games compilation, *BACK*. Proceeds from the BACK pack are to be given to the NSPCC for whom £350,000 was raised last year.

The NSPCC was a bit jittery at first about some of the games, pondering whether it was right that an organisation working against violence should be connected with games where the object is to shoot at everything that moves. After due consideration, however, it was decided that blasting pixels on a screen is rather too abstract a pastime to be a potential incitement to violence.

BACK
BATTLE AGAINST CRUELTY TO KIDS

The list of games has been finalised as follows:

Spectrum: *Xeno, Night Gunner, Marsport, Metabolis, Monty on the Run, Starion, Maelstrom, Starstrike, Lunar Jetman, Bounty Bob Strikes Back.*

C64: *Xeno, Barry McGuigan's Boxing, Nomad, Prodigy, Bounces, Skyfox, Elektra Glide, Starion, Bounty Bob Strikes Back, Monty on the Run.*

Amstrad: *Xeno, Grumpy Gumphrey Super Sleuth, Barry McGuigan's Boxing, Marsport, Monty on the Run, Starion, Starstrike, Knightshade, Night Gunner, Thing on a Spring.*

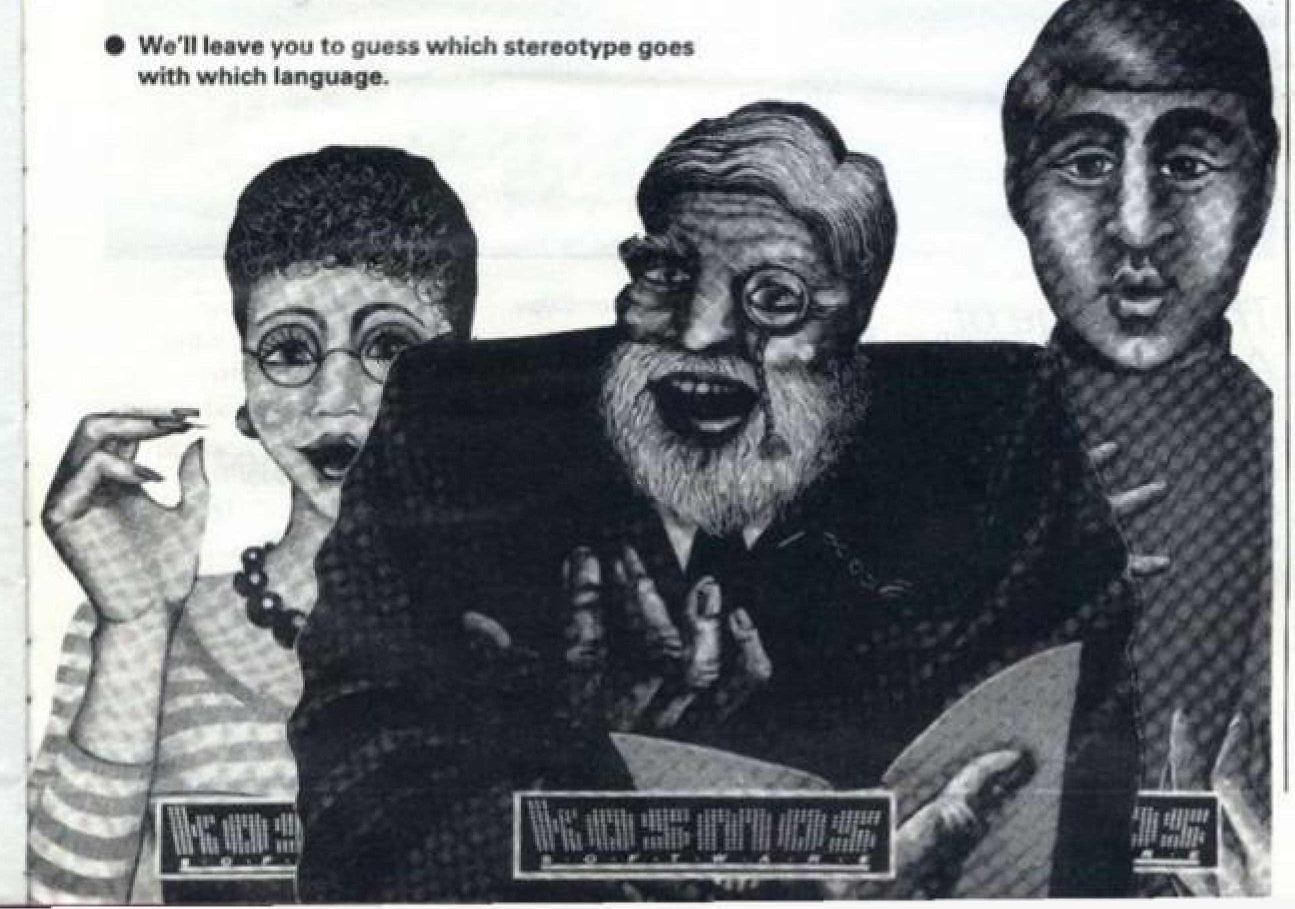
All versions of the Back Pack cost £9.99.

Kosmopolitan learning aids

Kosmos Software has now made available its four language learning programs, *The French Mistress, The German Master, The Spanish Tutor* and *The Italian Tutor.*

Over 150,000 copies of the products have been sold since they were launched for the BBC in 1982. Claiming to be applicable to both the absolute beginner and the university graduate, the programs cover a large range of vocabulary subjects including nouns, objectives, verbs and all your other favourite parts of grammar. Each package costs £19.95. Telephone 05255 394/5406 for further details.

● **We'll leave you to guess which stereotype goes with which language.**



U.S. Gold licensed to fantasize

US Gold is putting more muscle into its role-playing/fantasy side following a co-licensing agreement with SSI and games company TSR. SSI will be developing fantasy software based on TSR's Advanced Dungeons and Dragons role-playing game, while US Gold will start planning to make money out of the ancillary fantasy stuff such as books, add-on packs and miniature figures.

Main target is Games Workshop, which already does all this except for the computer side, but which makes far too much money already anyway, so that's alright.

WS at PCW

MicroPro used the PCW Show to launch *WordStar Express.* Like *WordStar1512*, it is marketed by Amstrad and is superseding the earlier package to allow for the introduction of the 1640.

New features include a background routine which provides a range of pop-up facilities including a calculator, diary reminders and an address book. WordStar Express costs £69.00 plus VAT.

Too little, too late, too much, too bad

Commodore has climbed on to the low-cost PC bandwagon (which Amstrad has proved departed last winter) with the PC-1, a £499 single drive clone which looked plausible when Commodore Germany launched it this spring, but which seems to have lost something in the translation. Dixon's decision to stock the Amiga is likely to have a greater effect on the company's chances than the PC-1 ever will.

letters

Scandinavian mags

Just a tip from the other side of the sea. Just bought the September number of your new style *Your Computer*. On page 55 the subscription for us foreigners is set at £30. It may not lead to many answers from Sweden – the price of the magazine bought at the newstand works out as £28.36 a year. Keep trying!

Olof Swembel
Spanga
Sweden

Time for a discount

Why do software houses take disk owners for a ride?

As an Amstrad owner I am fed up with being asked to pay four, five and sometimes six pounds more than the cassette price for the disk version. It would not be so bad if the disk offered an enhanced program but in most cases it does not.

As we can buy blank disks for £2.75 that means the software firms must get them for £1.50. If they only charged £1.50 more for disks they might well double their sales. At the moment, due to the outrageous prices, most people buy the cassette version and transfer it to their own disk.

Come on you software hosues, play the game and stop ripping us off.

G. J. Bostock
Urmston
Nr. Manchester

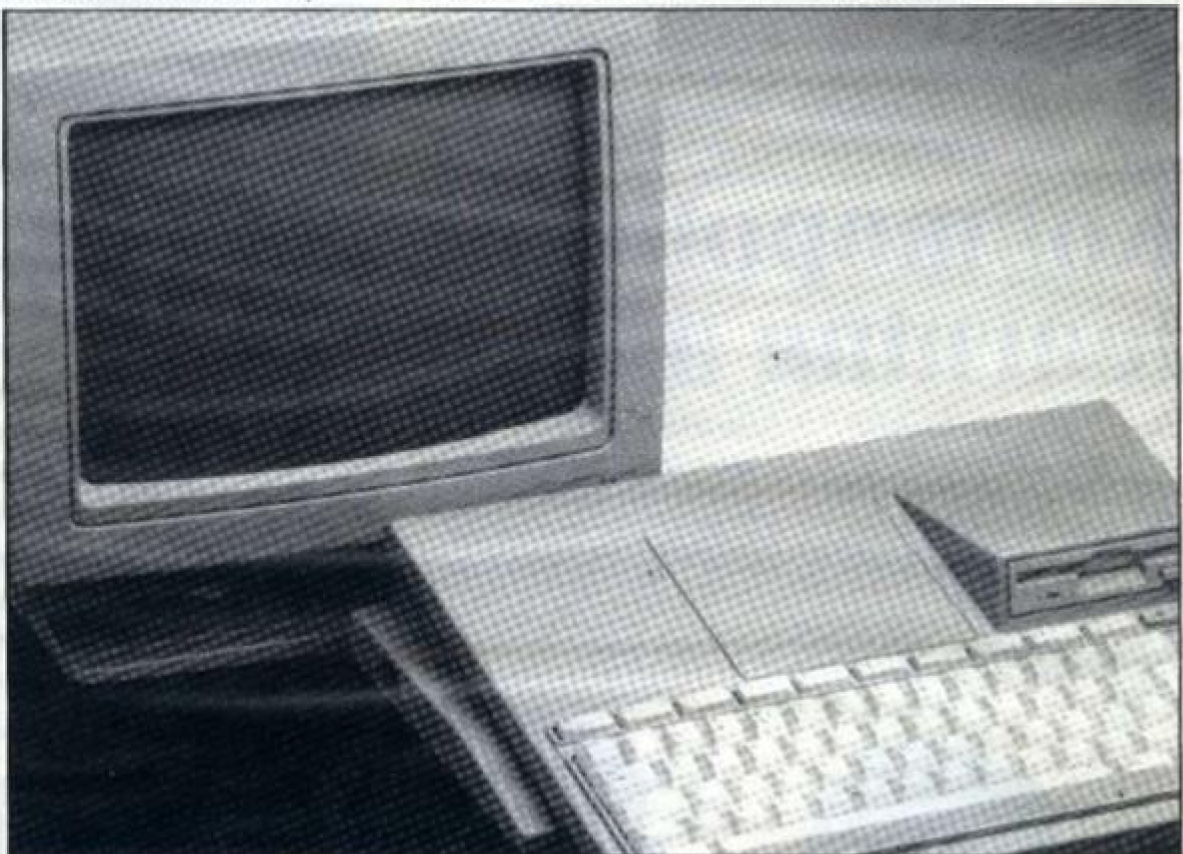
Come in PC1

I have been reading your October 1987 issue and am particularly interested in the forthcoming Olivetti PC1 as I shall shortly be setting up an office here.

Unfortunately I cannot find any reference to British Olivetti's address. Could you possibly let me know as I should like to make some additional enquiries of Olivetti in relation this machine.

C R M Hayward
Chard
Somerset

Editor's reply:
The PC1 was launched in Italy by a subsidiary of Olivetti called Prodest. This means that it is unlikely to be taken care of in this country by British Olivetti which prefers to deal with more upmarket matters. For the moment it is best to address enquiries direct to: Vico Angeli, Olivetti Prodest sta. 20153 Milano, Italia, Via Caldera 21, Italy.



The lost age of Aquarius

I have an Aquarius computer made by Mattel Electronics. Could you tell me where I can obtain software for this computer?

Peter Willcox
Bristol

Editor's reply:
Radofin Electronics (U.K.) Ltd. (tel: 0582 607066) and Hitech Electronics (tel: 0923 55441) will both be able to supply with software and even a certain amount of hardware for this machine which bit the dust more than four years ago.

Return of the MSX

I refer to your reply to the letter of Mr Eric Fox of Canterbury in the October issue.

In your reply to Mr Fox you stated that MSX-2 was not sold in this country. Agreed that MSX products are somewhat hard to find but MSX-2 is in fact sold by Bullock's MSX-2 Centre, 42/44 The Priory, Queensway, Birmingham B4 7EW (tel: 021-200 3255) and it is the Philips 8280 referred to by Mr Fox that they are offering for sale.

May I take this opportunity to congratulate you on the quality of the magazine itself and the standard of its contents? I bought it for the first time a few months ago on the demise of MSX Computing and am now a regular reader even though MSX is not dealt with apart from being mentioned in new software reviews. A pity, as there are, so I understand, reckoned to be about 100,000 MSX users in the U.K.

Anthony Bevan
Horsham
W. Sussex

Editor's reply:
David J Krawczyk of the MSX Central Computer Club, 14 The Wardens Avenue, Allesley Village, Coventry CV5 9GJ (tel: 0203 405498) has also written to us to say that his club is able to provide MSX hardware and software for those encountering difficulties.

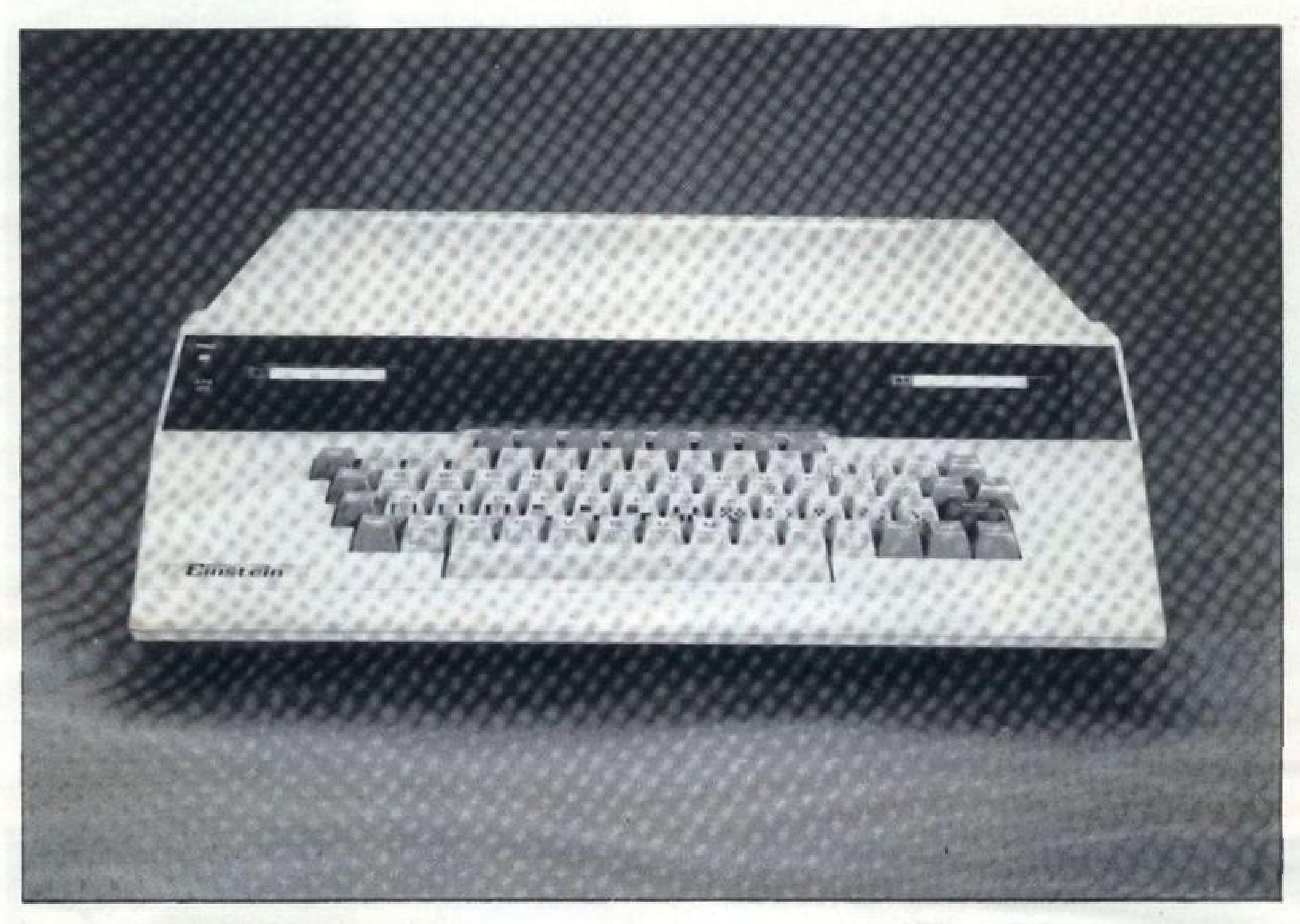
Einstein lives

I wish to reply to the letter from Mr Ward of Canvey Island, which appeared in your October edition.

The Einstein is far from being a "dinosaur". The range of software and peripherals available for this computer is comparable with any other 8-bit computer, and is increasing.

The support received by owners of the Einstein is, I believe, far superior to that

Something to say about personal computing? Why not share it with other readers? Write to Readers' Letters, Your Computer, Greencoat House, Francis Street, London SW1P 1DG. Letters may be edited for length. Don't forget to include your name and full address.



offered by some other computer manufacturers. On puruchase of the Einstein, the owner simply returns a pre-paid card to the User's Club; by return he or she will receive the latest list of software and hardware, plus a list of dealers, local user groups and publications. Every three months each registered owner receives a free updated newsletter.

Julian Willis
Tatung (U.K.) Ltd.
Stafford Park 10
Shropshire TF3 3AB

Einstein lives at . . .

Here are a few addresses that J. Ward may find useful:

Graham Bettany
U.K. Einstein User Group
80 Dales Road
Ipswich
Suffolk IP1 4JR

Jim Ellacot
39 Parkside
Westcliffe on Sea
Essex SS0 8PR
(for software list send Jim SAE plus 2 x 13 pence stamps).

B & H Computers
Bank Top Works
Southowram
Halifax

L.G. Stanley
Moreton-in-Marsh
Glos.

More fun with Spectrums

I have just read the letter "In praise of older Spectrums" in the September issue. I have in fact almost the same set-up as D. Twycross, possessing Artist, Int 1 and HR 5 (by far the best printer for graphics purposes).

I also have a program called Tascopy and include some printouts using it. Tasman I have always found to produce excellent programs and Tascopy is no exception. Tascopy Grey produces grey scale print for Spectrum colours.

Both superprinter and Artist require a screen save to tape (or microdrive?), after which Tascopy and the screen should be loaded. It can then be printed using only Randomise User 28296.

I'm sure these will do what you wish; I have found them excellent programs. I happen to deal with IBMs etc. at work and home and have found their software much worse than the Spectrum's and at approximately five times the price. Extremely frustrating.

J.F. Lowden
Yateley
Surrey

More MSX

I am writing to say how pleased I was to see the MSX software reviews in the October edition of *Your Computer*. I have seen both the games and can only agree with the reviewer – they are both cracking games.

When companies like Konami write software for the MSX system, they show how good the format can be. They make other 8-bit systems look like toys in comparison. I see also that Konami's latest cartridges have eight-voice sound chips built in. I can't wait to hear them.

Here's hoping for more MSX reviews etc. *(sic – who do you think you are, Nigel Molesworth? Ed.)* in your magazine.

Keith Neal
Bourne
Lincs.

letters

CONTINUED

Renewed outrage

I am replying to Ms Rebecca Winston's letter published in September's *Your Computer*, referring to the sexist nature of a certain photograph.

Is this lady half blind? Yes, there was an extremely feminine female with very few clothes on, but did she not see an extremely masculine male in the same photograph, also with very few clothes on? Surely she should be complaining about the exploitation of the male body as well if she is so intent on being so moralistic. It seems to me that the female element of sexism in this photograph is balanced by a male element of sexism.

Going back to fundamentals, I wonder if Ms Winston has a few hang-ups about sexuality? I fail to see the fuss; after all this is the most natural thing in the world. I would be grateful if you would pass this letter on to the lady in question in the hope that she may reply to my criticisms of her attitude.

Richard Price
Colyton
Devon

Having a ball

My name is Kenneth Carlsson. I'm from a small village in Sweden, Gnosjo. I read your September issue today and found a notice about a very interesting game called Hardball. This seems to be a game I'd like to own as soon as possible.

Now to the problem: I'll probably have died of old age by the time the game appears on the Swedish market. Are there any firms in England which will gladly send software abroad, to Sweden for example?

The reason for asking you is that there is a small market for Atari in Sweden, at least in my neighbourhood. We Atari users drown in the Commodore market. Only if we are lucky will there be a small item about the ST in the computer magazines. Sad!

Kenneth Carlsson
Gnosjo
Sweden

Editor's reply:
U.S. Gold which looks after the Accolade label in Great Britain says that you will be able to get hold of the game in Sweden by contacting HK Electronics, Henvarns/Vatan 8, 17154 Solna, Sweden 87331290.

An intrepid adventurer loses his way

Please could you give a desperate adventurer some help? I don't know anywhere that I can get advice except from the games manufacturers themselves. Some of them answer my pleas, others let me sweat for a week before I figure out that they haven't answered.

Andrew Leroux
Romford
Essex

Editor's reply:
Our resident adventure expert Mike Gerrard suggests that you try The Adventurer's Club, 64c Menelik Road, London NW2 3RH. For an annual subscription of £11.95 a year, you will receive a monthly magazine, substantial discounts on a number of games and a help-line service.

In all seriousness

What a refreshing article was "No, but seriously" in the October issue of your magazine. So many seem to knock yesterday's machines in the ever-increasing search for more memory, faster speeds, higher resolution and so on. For home use, even serious application, my dear old Spectrum has never been really stretched; slow maybe on occasions, but who really minds?

My kit comprises: a Spectrum 48K (one of the originals), a Spectrum + keyboard modification, an Interface 1, two microdrives, a Sinclair printer (not often used now), a Kempston Centronics interface and a Citizen 120D printer. All of these have been acquired over a company of years.

Serious applications in use for several years include word-processing, poster writing and the like, particularly for support of a Scout Group. Group accounts are kept on a spreadsheets, with the annual statement printed out.

Home written applications include an Amateur Athletics Association 'Star Awards' calculator for schools' athletics, a set design graphics system for an amateur dramatics society and, under development, a lighting control board.

Keep the magazine going, even for a dinosaur like me.

Kevin J. Crawley
Kemsing
Kent

Britain's first computer system

I am writing to you regarding the article on page 10 of the September 1987 edition of Your Computer about the setting up of Britain's first national computer museum.

I would like to point out that it will not be the first one in Britain as the Scottish Computer Museum is operating at 181 Camps Rigg, Livingston, West Lothian (tel: 0506 35132).

J. C. McNeill
Old Kirkpatrick
Strathclyde

Non-existent compiler

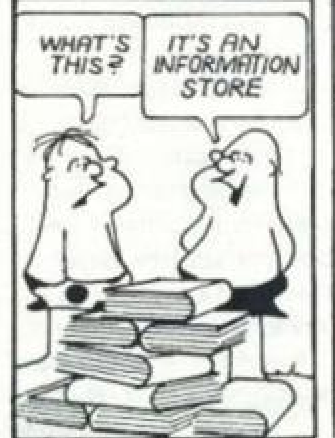
I would like to point out a mistake in the article by John Wase on serious uses for the ZX Spectrum in the October issue of your magazine.

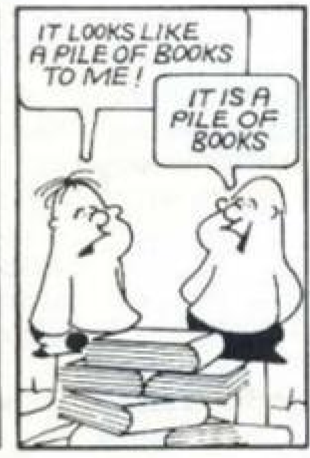
In it he incorrectly states that Hi-Soft produces a Fortran compiler for the Spectrum. In fact he must have been thinking of the Mira Software Fortran 77S Compiler as this is the only Fortran compiler available for the Spectrum.

Stephen Lee
Kibworth
Leics.

MAN LOGIC

By NEIL BRADLEY











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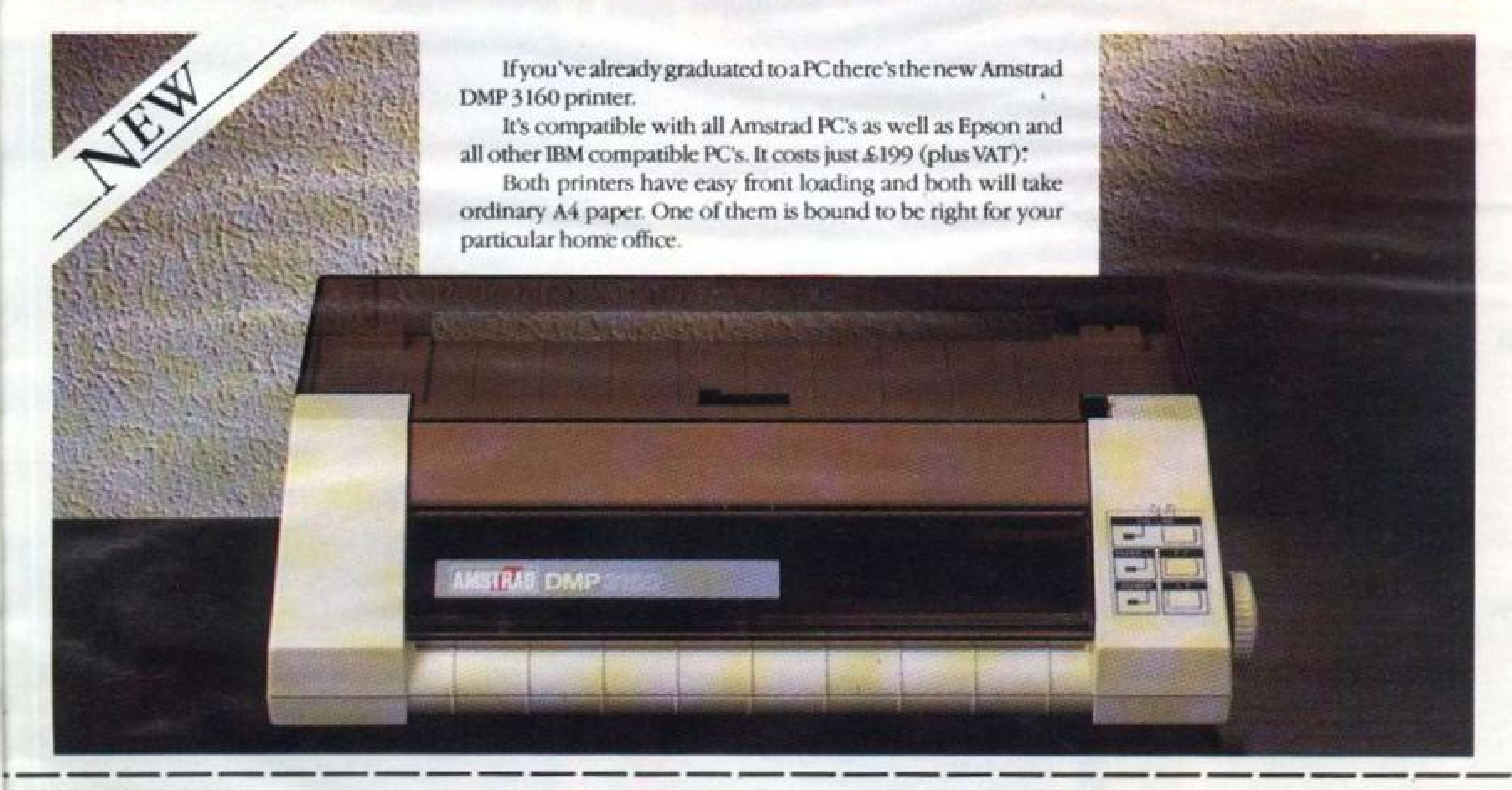
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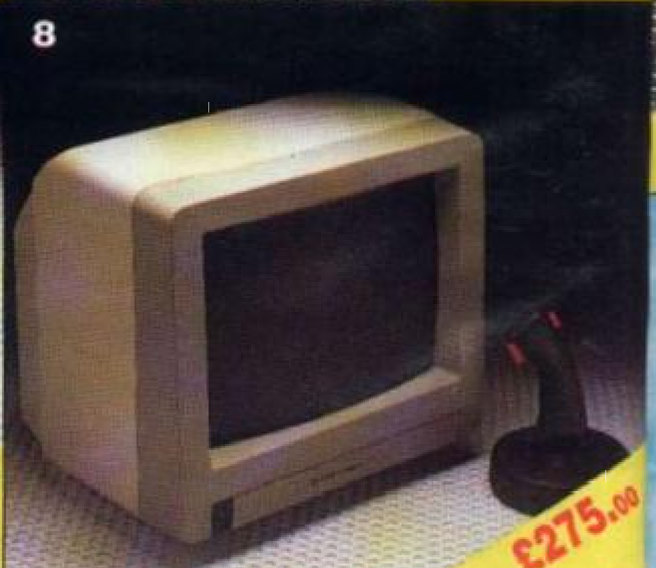
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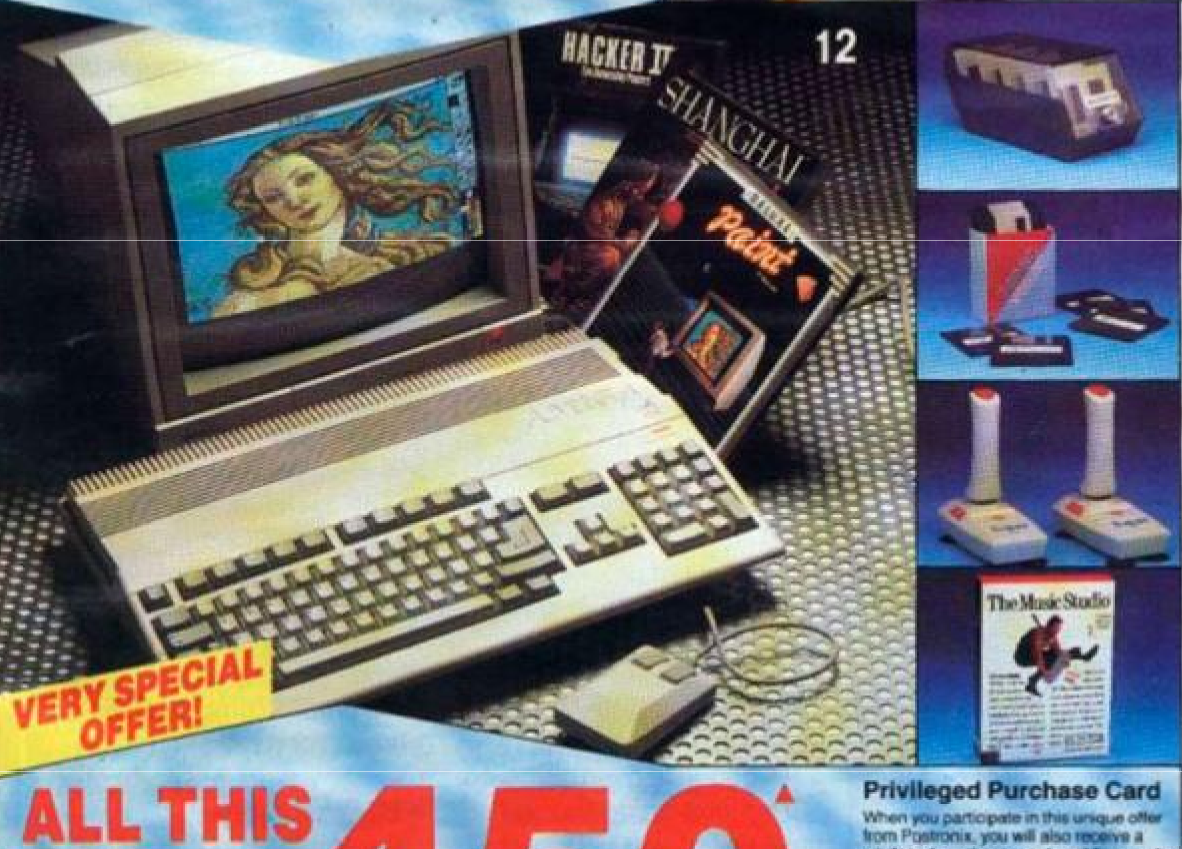
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line noise

Micronet Children in Need bid

Micronet is once again joining in with the annual BBC charity telethon, the *Children in Need* appeal. Last year, Micronet and Prestel joined forces with Information Technology Centres (ITECs) all around the country to raise nearly £50,000.

Like last year, the Micronet editorial team will be at London's BBC Television Centre interviewing celebrities on special chatlines and also accepting pledges and bids for computer items on an online charity auction. So if you're not one of Terry Wogan's most ardent fans, perhaps the Micronet Children in Need appeal might be the perfect alternative to the box on the evening of November 27th.

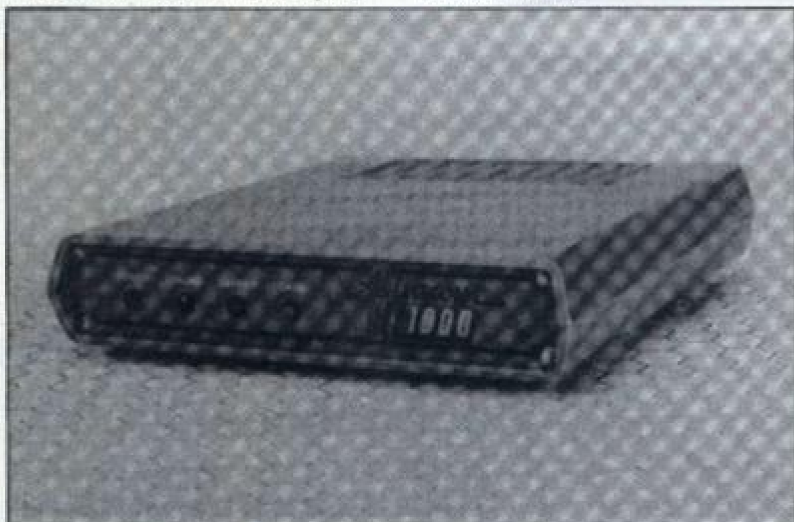
New modems from Pace and Astracom

The PCW Show marked the unveiling of new intelligent modems from Pace and Astracom. Pace has produced a 1,200/1,200 full duplex (V22) version of its popular Hayes-compatible Linnet modem. Called the Linnet 1200, the modem will sell for £229 plus VAT and should be available with full approval by now.

Astracom has announced a V22 version of its 1000 series modem, which is now Hayes-compatible, for £100 more than the V21/23 base model at £245 plus VAT. For £75 more, at £320 plus VAT, you will soon be able to get the new Quad version of the 1000, with V22bis – 2,400 baud – capability.

Keith Webb of Astracom explained that the V22bis modem is so cheap due to recent modem-chip releases which have permitted a much-simplified circuit design. It looks like the start of the big slide in higher-speed modem prices which has been on the cards for some time.

Existing Astracom 1000 owners can upgrade to Hayes compatability and the new add-on speeds by returning their modems to Astracom for re-fitting.



Right: The V22 version of the 1000 series from Astracom.

Electronic Copy

News International, the controversial newspaper group owned by Rupert Murdoch which publishes the Times, Sunday Times and The Sun, has at last come up with something rather less controversial in its quest for technical modernisation – a customised comms package designed for filing news copy electronically.

News International is now distributing to selected journalists and news agencies packages consisting of an Amstrad PC, a Tandata Tm512 intelligent modem and a comms terminal developed in-house. It is designed to be used in conjunction with the News International Mercurylink 7500 email mailbox.

Much urgent news copy currently is filed to newspapers by telex, but this means that stories must be completely re-typed as a telex cannot send lower case characters and has a limited selection of punctuation symbols. The News International system allows incoming text to be stored straight into the company's own electronic subbing system, prior to printing. Apparently, news agencies have taken to the new system well and are looking into using it more widely. It is nice to know that News International has caught up with *Your Computer*, which often receives copy via email!

Minitel for the UK?

Ex-Acorn boss Chris Curry has recently been publicising his latest brainwave which could revolutionise computer comms in the U.K. just as Minitel has already done in France.

For the last two years Curry has been searching for a way of applying computer technology with the ordinary individual in mind. Computers are very useful things but most micros in the home are used solely for games, or perhaps word processing.

Curry's solution involves co-operation with the large regional retail chains, British Telecom, extremely packed VLSI chips, and artificial intelligence-derived software.

This interesting concoction, once mixed liberally together, becomes a Keyline computer, a highly intelligent but inexpensive portable computer terminal which is designed to replace *Yellow Pages*, hook into all your favourite retailers like supermarkets and high-street chains, and even access on-line bank accounts. What is more, Curry hopes to be able to give away Keyline terminals.

The scheme visualises that participating retailers or information providers will buy a specially-configured ICL super-mini to provide an information interface with a nation-wide ICL network. The retailer's computer would provide an up-to-date price list and an ordering facility. BT would have its own link into the ICL network to provide directory information. There is no reason why existing on-line banking services could not join the scheme either.

Besides investing in the ICL super-mini package, participating companies would pay a small percentage of their transactions to Curry's new company responsible for the keyline system. That is rather similar to the commission charged by credit card companies to their retail agents.

How is the man in the street, who may be computer illiterate, to use such a sophisticated system? That is where AI scores. The Keyline computer will have an intelligent, learning, software interface complete with phrase-dictionary to accept simple command sentences in ordinary English.

The operating system learns by noting command words used commonly by that user and it is even supposed to remember your regular purchases, thus helping you to save time in compiling regular orders. For the first time, Curry envisages anyone with a modicum of sense using computers without techno-fear and getting a genuine use from the technology.

Curry sees the only way of getting the general public to understand the technology, no matter how good it is, is to

news from Phil Rotsky and Ian Burley

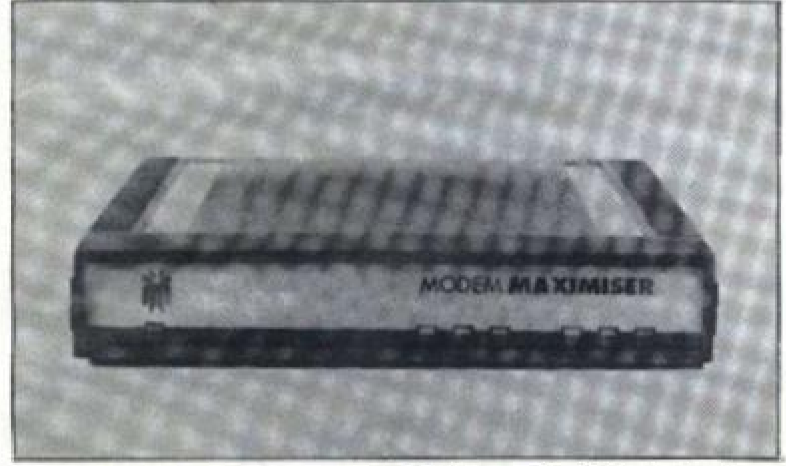
give it away – once again like signing up for a credit card or a bank account. Therefore the keyline terminal must be incredibly cheap to produce.

GIS, the company Curry formed soon after leaving Acorn, was responsible for the Red Box range of mains electricity-linked peripherals developed last year and is now working on VLSI chip designs for the proposed Keyline unit. It hopes to produce a unit with only two or three chips, one of which alone will contain the processor, a 1,200/75 baud modem, a real-time clock and some memory.

Huge quantities will help to reduce unit costs and Curry envisages distributing half a million Keylines by the end of 1989. He hopes that will progress to several million in following years.

The idea is an elegant one but that will not guarantee success. Curry is canvassing the City for financial backing and he will need to use all his skill, and more, to make the financial institutions part with the £20 million or so for which he is reported to be looking.

• • • • • • •



• **Above: The Miracle Modem Maximiser allows incoming data to be stored automatically.**

Miracle Maximised

Miracle Technology, makers of the popular WS range of modems, announced a new modem enhancement device at the 1987 Personal Computer World Show. Called the *Miracle Modem Maximiser*, this is no quack potion for your ageing dumb modem but a hi-fi style stacking unit matching its stylish WS3000 and 4000 stablemates which adds a Centronics parallel printer port, error protection protocols, data encryption and compression, a 16K battery backed data store and buffering to the terminal computer at speeds up to 9600 baud.

Three error protection protocols are provided; standard XMODEM, EPAD, which is BT's error protection standard, and MPAD, Miracle's own standard used in conjunction with the Huffman coding data compression facility. Data encryption, which prevents unauthorised listening in on data transmissions, can encode both incoming and outgoing data, simultaneously if necessary.

The 16K buffer store provided allows incoming data to be stored automatically, even unattended over long periods. Miracle says that the Maximiser can be configured to accept incoming calls, say, overnight with the minimum of fuss; it will not even be necessary for the terminal computer to be switched on as calls come in.

A Maximiser connects to a modem at up to 2400 baud (V22bis) via a standard 25 way D type serial connector, and to the data terminal computer via another serial connector at up to 9600 baud. Prices start at £225 plus VAT minus the encryption capability, which in turn adds a further £99 to the system price. Miracle is offering special package prices including a WS4000 modem; £320 for the V2123 version, £520 with a V22/23/21 system, and £675 for the V22bis capable setup. Add £75 for the WS3000 alternative bundle. Further information can be obtained from Miracle on Tel. 0473 216141.

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Hacking Chaos for NASA DECs

Six young West Germans have been causing several large organisations headaches from the comfort of their homes. Allegedly exploiting a technical loophole in the VMS operating system used by DEC in its VAX minicomputer range, the German six, who are linked to the self-styled Chaos Computer Club in Hamburg, claim to have hacked into more than 100 VAX installations connected to the NASA Space Physics Analysis Network.

The hackers claim to have found the flaw in VMS operating system versions 4.4 and 4.5. Using software devices described as Trojan horses, the hackers were able to log incoming data during the log-in sequence being run by VMS whenever someone was using a given VAX computer.

Put simply, the hackers were able to cream-off passwords and ID numbers as they were being entered without being detected. Think of a program written specially to look like the log-in sequence of a VAX but designed to siphon-off input data for later use and you have a simple Trojan horse.

There are around 1,500 VAX minis connected to SPAN and the network is also connected to other research-based networks such as the U.K. Starlink, the European CERN particle physics research facility, and Phillips, the consumer electronics group. The hackers claim they had access to almost anything connected to SPAN. As a result of moves made by the Phillips and CERN, police in Germany have made surprise raids on locations associated with Chaos. Various items were taken for evaluation, but no arrests were made.

Closer to home, representatives from the Department of Education and Science have met DEC to discuss VAX/VMS security; after all, VAXs are probably the most commonly-used minicomputers in science and education at present. There were worries that as SPAN gives access to Starlink, a U.K. astronomy network, unauthorised access by the hackers to radio telescope facilities like Jodrell Bank may have been made.

Similar but also unproven stories of hackers getting far enough into computer systems to command satellites via radio-telescope earthstations have emanated from the U.S. in recent years. Although NASA first spotted the alleged hackers in the SPAN network in August last year, it was in May that DEC issued VMS patches to counteract the VMS loop-hole. A VMS version 4.6 was released recently. Ironically, VMS version 4.3 had previously passed several rigorous Pentagon security tests.

The SPAN incident is a sobering reminder that as computers become more and more integrated around the world their vulnerability can be multiplied manyfold – the unacceptable price of the communications revolution.

line noise

High-speed Tandata

The number of V22 and V22bis (1200 and 2400 full duplex) modems coming on to the market is very encouraging, especially as they're getting cheaper all the time (see elsewhere in this month's *Line Noise)*. The problem is that there still aren't that many V22 and V22bis networks to which they can be connected. Some expensive business systems and selected Prestel access points in the new Vasscom network do offer high-speed access, but if you are keen to invest in the new technology, you may not have anything to log in to just yet.

Tandata has now come to the rescue of its customers by devoting a telephone line and one of its own Tm512 high-speed intelligent modems to allow test access for V22 and V22bis modems. Admittedly there isn't much on the simple Tandata database, which is a 7-bit, even parity 1-stop bit, scrolling hose, but at least you will be able to check the high-speed functions on your modem.

The Tandata test port can be accessed on Tel. No. 0684 892424, and the log in password is TANDATA.

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Microlink translates

Last month we reported on BT's new computer controlled speech translation system. This month the language translation theme continues with news that the Telecom Gold service, *Microlink*, is to provide a gateway to the European Centre for Automatic Translation (ECAT) which is based in Luxembourg.

The ECAT translation system is claimed to be able to translate passages into a rough form which can then be tidied up quickly and cheaply for final presentation. Most European languages are catered for, and ECAT also claims to have the largest online multi-lingual dictionary in the World. ECAT runs on a COTEL computer hooked into the Euronet Diane network, through which Microlink's gateway is connected. On average, connection to ECAT facilities costs about 9p per minute on top of standard Microlink/Gold online charges.

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Gold telex revisions

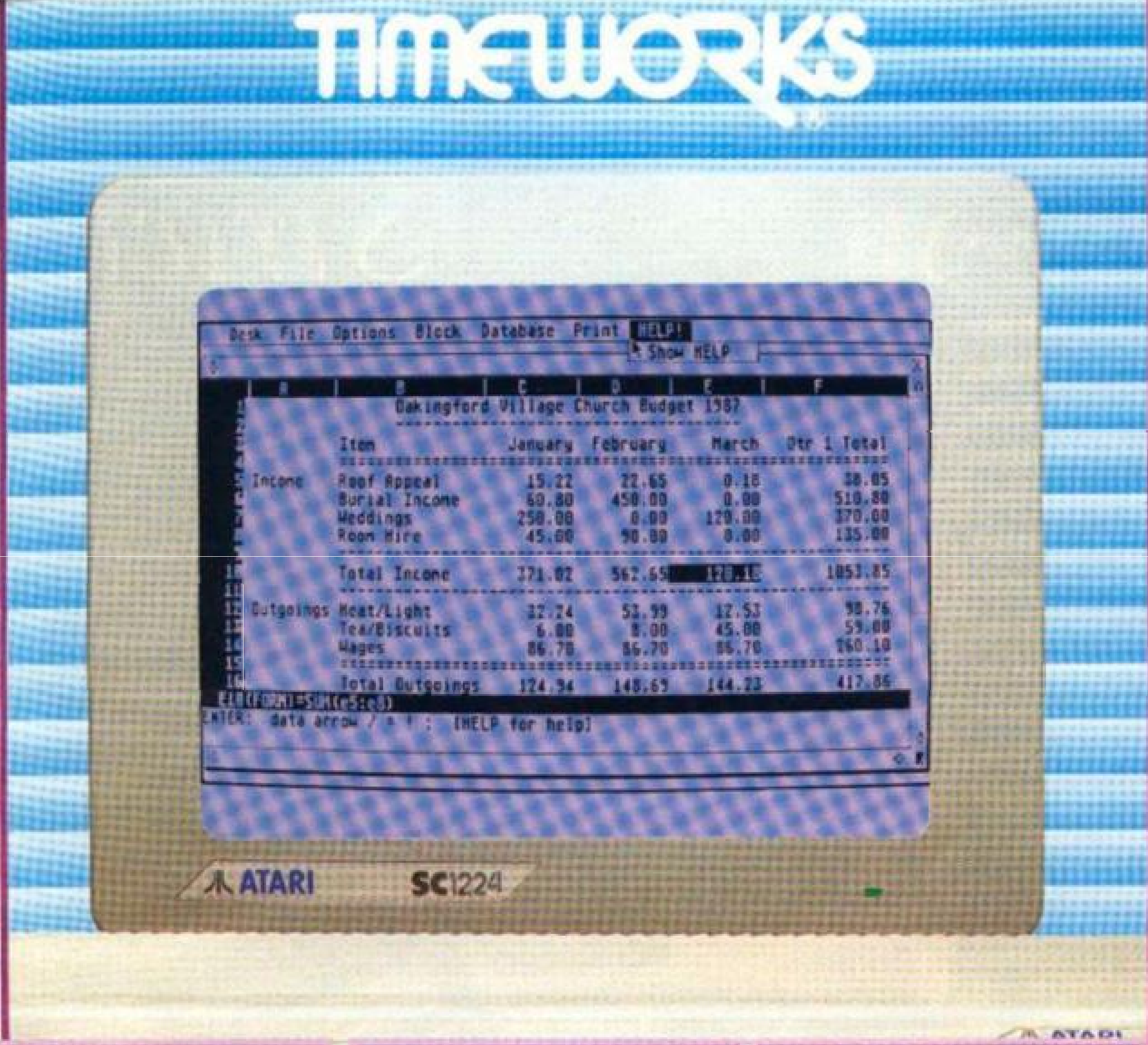
Following the lead of rival Mercurylink 7500 in providing unique telex numbers to its email subscribers earlier this year, Telecom Gold has decided to offer a similar ideal to its users. Both systems reduce the complexity in sending a message to email users on the two systems.

The first benefactors of unique telex numbers on Gold will be corporate account holders, followed soon after by ordinary users such as those registered with Micronet's Interlink service and also Microlink.

PC modem reduced

While the attention of everyone at the Miracle Technology PCW Show stand was caught by the innovative new Maximiser Miracle also announced at 22% reduction on the prices of its Keycard 3000 modem card range for IBM PCs and compatibles. The base V22 model now costs £275, while the top end V22bis version will retail at £545. Miracle claims that production savings have allowed it to cut prices. Incidentally, Miracle has announced that it is now offering extended warranties and maintenance contracts on all products. The company recently moved into new £750,000 premises in Ipswich and is now manufacturing over 20,000 modems a year. Not bad for a company which started in 1983 with that modem classic, the WS2000.

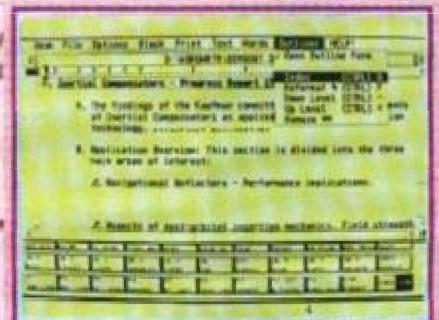
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personal information

THE TRULY PERSONAL COMPUTER IS ON THE WAY. ELVIN IBBOTSON REPORTS.

The Filofax, or a clone is useful. It is better than a simple diary. The loose-leaf format and special forms and chart paper make it far more versatile and effective, provided that the time you save being so efficient is not spent making sure your year planner ties with your daily diary. The main disadvantages of a paper-based system, though, are that it does not sort or cross-reference entries automatically; out-of-date entries tend to be crossed out, other people can read everything you enter and unless you check it morning, noon and night, you are still likely to forget to take the borzoi to the vet.

What is required is something at least as portable and convenient as a Filofax which can be used without an instruction book and will store, sort and cross-reference data in the way which should be as natural to a computer as it is not to a pile of paper. That is not a demanding specification. It should be easy to achieve in this age of miniaturisation and 32-bit personal computers.

- **Main pic: The Psion Organiser has proven successful.**
- **Left: Casio is also interested in the strictly personal computer market.**

Amazingly, though, it is not easy to find a viable electronic alternative to the Filofax. Ninety-nine percent of computers can be eliminated immediately if you ever want to leave your desk. Even most portables and lapheids are usable only in an office environment; the Filofax would be less of a success if it filled your briefcase completely, caused unnatural lengthening of the arm during the walk to the car park, or the ink fased after more than an hour away from a mains outlet. So what does that leave?

- **Left: A point-of-sale Psion machine as used by Marks & Spencer.**

An early candidate was the Tandy 100, now the 102. It is the large size, taking up a good deal of space in a briefcase and weighing almost 4lb. The price is high, too – around £300. It is a good, truly portable computer but the built-in diary and address telephone directory are not so sophisticated as they need to be.

The Cambridge Computer Z-88 is closer. It is still rather big, but half the weight of the Tandy and the built-in appointments diary will remind you of an imminent birthday.

The Psion Organiser is probably more of a Filofax substitute. Its size and weight are less than the paper-based system and the price is comparable with a leather-bound executive model. It will buzz you an hour before an appointment and it is good at organising your data. The keyboard is adequate for data entry and note-taking but it is a pity that a pocket-sized machine is too thick (29mm.) and too heavy (250g.) to carry comfortably in a pocket.

The Japanese pocket computers from Casio, Sharp and others may be the answer for some. As portable as a pocket diary, their built-in appointments and databank could make it and your address book redundant. They cost around £40 for 1 or 2 KB of memory.

The best contender, I think, does not pretend to be computer at all. It cannot be programmed but it has all the essential features of our specification, is cheap and very handy. The Datacard 4000 resembles a credit-card calculator but, as the name implies, will hold up to 4K of data. I have transferred my list of telephone numbers and addresses and other personal data, along with all my appointments and various other notes and reminders, to the card and still have more than 2.5K of memory free.

Its alarms remind me to make telephone calls and keep the appointments I used to forget when they were out of sight and out of mind in my diary. It sorts everything into alphabetical order and I can easily look up numbers, browse through my appointments, and erase or alter entries.

Code

A code number I set myself lets me store PIN numbers and bank balances hidden from inquisitive eyes – an essential feature which seems not to occur to most manufacturers – and the tiny keyboard is surprisingly easy to use for notes when I do not have paper or pen to hand. It is a combined diary, address and telephone book, notepad, clock and calculator which does not fill your briefcase or even your pocket, runs for a year on one tiny battery, costs around £20, and takes no more than an hour to master – a real electronic Filofax.

The data card is a neat idea and once you have one you will soon wonder how you used to manage without it. Once the novelty wears off you will start to think "If something the size of a credit card can do all this, what could something the size of a Filofax do?" and your imagination will take some exercise. You will not, of course, be the first person to think along those lines.

Incredibly, it was perhaps 20 years ago that the people at PARC, the Xerox Palo Alto Research Centre, toyed with the idea of the Dynabook, a book-sized computer with a flat, touch-sensitive screen. It was in the realms of science fiction at the time, when computers tended to fill rooms rather than pockets, but the software approach, equally innovative but more feasible, was developed first in the Xerox Star workstation, then in the Apple Lisa, finally becoming a commercial success and an industry standard in the Apple Macintosh.

Easy

The idea was to make using a computer as easy and natural as using pen and paper. That is achieved through the desktop metaphor with filing cabinets and rubbish bins depicted graphically on-screen. On the Lisa you did not have to load files or run word processor or spreadsheet programs; you just pick up a sheet of writing paper or graph paper. The idea , without us really noticing it, has become diluted in its current form. The Macintosh, GEM and Microsoft *Windows* are only shadows of the original concept but are still a vast improvement on the MS-DOS command line.

Despite not being taken seriously by those weaned on CP/M when it appeared, the Macintosh approach is now becoming dominant. IBM has given it the final stamp of approval by adopting *Windows* for its new PS/2 range. The operating system as a visible entity is about to disappear, at least to the ordinary computer user.

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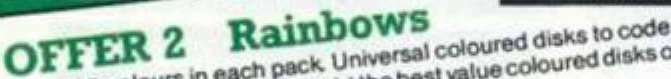
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could buy an Epson HX20 or a Tandy 100 lap-held with up to 16K of RAM and a maximum of 320 characters on-screen. In 1984, the Epson PX8 had 64K RAM and a 640-character screen. The IBM Convertible, two years later, had 256 to 640K, 2,000 characters on-screen and twin floppy discs.

As engineers cram more memory on to a chip and more pixels into an LCD, more and more can be done within a portable box for a given price and power consumption. On average, the memory capacity of battery-powered portables has doubled every year since 1982 and their screen resolution has doubled every two years.

Inevitably, portables lag behind desk-top computers by about two years in terms of power but the current generation based on Intel 80286 and 80386 processors have far more raw power than present-day software or users employ. Until now battery-powered computers have had very obvious shortcomings; you could not see enough on the screen, everything happened at a snail's pace, or there was insufficient memory to use sophisticated software. When you have four million characters of memory and 300,000 pixels taken care of by a 32-bit CPU the problems cease to exist.

Visionaries

Before long technology will finally catch up with the imaginations of those visionaries at PARC; there may be a possibility of making the Dynabook a reality. Perhaps we can even take their ideas a little further. Let us look back at our original thoughts about an electronic Filofax; let us call it a Dynafax and imagine how it could be put together.

The first step must be to clarify what we want this ultimate executive toy to do. It has to start by doing everything the Filofax does; it will have a built-in clock/calendar, electronic diary with alarms, address and telephone directory, secure storage of personal data – bank and credit card accounts and PIN numbers, National Insurance and driver's licence numbers and so on – the ability to keep track of personal finances and expense accounts, and space to make notes and lists or to sketch diagrams.

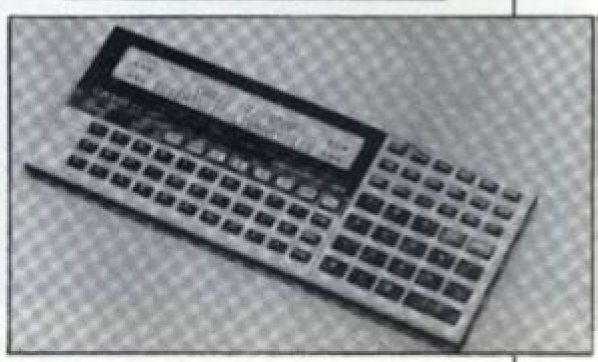
Those needs can be met very easily by simple database, spreadsheet, text editing and drawing programs but if this advice is to be used by salesmen, secretaries, doctors and farmers rather than only by the still small computer-literate minority we will have to scrap words like spreadsheet and program.

On desk-top machines that ease of use is being found through the desk-top metaphor and the mouse. Neither is entirely appropriate when our Dynafax is likely to be used as much in a car, on a train, in meetings and wine bars as in an office.

Since we started with the Filofax, why not adopt it as the metaphor? Instead of taking files from a filing cabinet and opening them on the desk-top, just turn to the appropriate section or page in the Filofax. You may not have a flat surface for a mouse to run around and it would just be something more to carry but the Dynafax is in your hand with a flat LCD screen looking for all the world like an open book.

Why not point to the screen? That is the obvious thing to do, which is why light-pens and touch screens were though of before the mouse, but constantly reaching out to point to a VDU just gives you arm-ache. That would not be a problem with a portable machine and the technology is available. Touch-sensitive LCD screens are used on data collection devices and there are transparent graphics tablets capable of the same resolution we envisage for the Dynafax screen.





● **Below: The Casio FX850P pocket calculator offers RS232C interface option.**

The built-in software would provide the icons, menus and buttons, and the user would point with a finger or with a pencil-like stylus for more accuracy or for drawing. The input device is the display device, too – just like paper.

Suddenly we can dispose of the biggest single problem with portable computers, the keyboard.

The big LCD screen and friendly software will display a calculator pad or a full alphanumeric keyboard and still leave room to see the part of the page on which we are working. So we can eliminate the typewriter keyboard and we do not need to replace it with smaller calculator-style keys because they can appear on the screen as and when they are needed.

The limiting factor now on the size of the Dynafax is the screen. It must be big enough for a 640 x 480 pixel display, as adopted by Apple for the Mac II and IBM for the PS/2 and wide enough for about 15 calculator-size keys. The Dynafax will be about A5, half the size of a Tandy 102 or Z-88.

Lotus 1-2-3

Lotus 1-2-3, possibly the most widely-used microcomputer program, integrates three popular and useful applications – spreadsheet, database and business graphics – using the spreadsheet as its foundation. The Dynafax will go beyond that and integrate all popular and useful applications. Based on the Filofax metaphor it will use the newest and most significant micro application, desk-top publishing, as a skeleton to integrate spreadsheet, database, wordprocessing, business graphics and drawing programs and a time scheduler.

The integrated operating system/window manager/applications software to do all that is held in ROM, leaving the full 4MB RAM free to hold text, graphics and data – everything you write in your Filofax. The memory will be battery-backed and the main drain on the batteries, the screen, will switch off automatically if you do nothing for a few minutes. Touch the screen again and it springs to life exactly as you left it. With so much battery-backed memory there is no need for a disc drive.

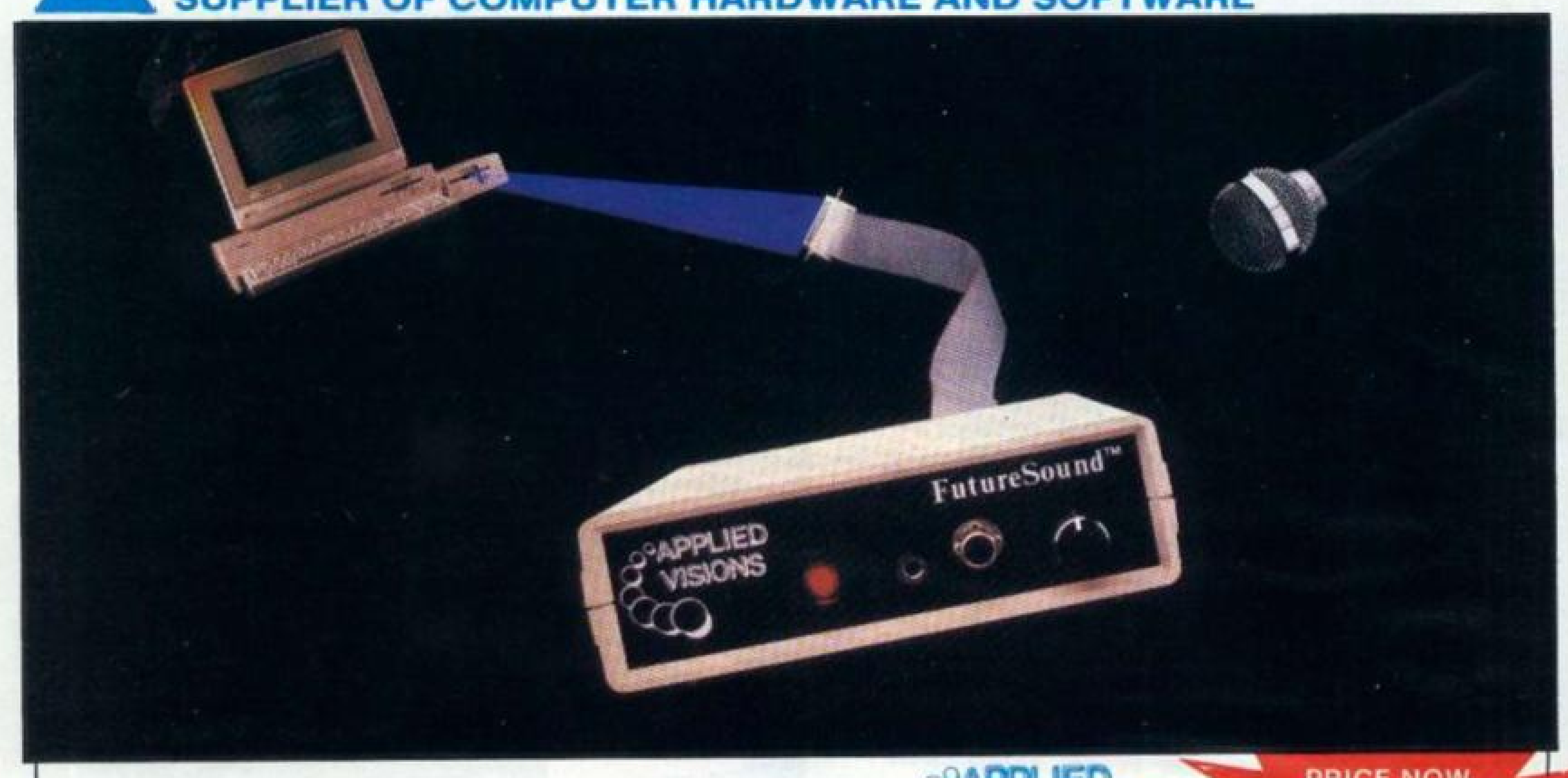
The Dynafax is not a pipedream. If someone started on the software tomorrow, by the time it was ready in two years the screen, processor and memory would not only be available – they would be cheap enough for it to sell for £200.

Such is the speed at which computer technology develops that in two years the Dynafax could be an ordinary device and the dream will have moved on to encompass colour LCD displays, already available, and sufficient power and memory for this ultimate personal computer to be a dictionary, national telephone directory and atlas as well as diary, address book, notepad and calculator.

When the early microcomputers arrived, with limited memory and power, the question was for what can we use them? The better question, "This is what we want to do – how can we do it?" was not asked because the machines could not do anything really useful. Now our blinkered imaginations and fixed ideas are the limiting factor, not the hardware. It is time to ask the proper question and to use computers to provide solutions. The Dynafax idea is one such solution at the real personal computing level.

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DELUXE NEWS MAY 1987
QUOTE
The OPEN THE POD BAY DOORS HAL Line that appears on the Deluxe Video demo disk was actually one of the very first recordings ever made using Futuresound.
Futuresound the premier audio digitizer for the Amiga.

CCI JANUARY 1987
QUOTE
A sound created with Futuresound and saved in IFF could be read into INSTANT MUSIC or DELUXE MUSIC for further manipulation.
Using Futuresound is simply a matter of making certain that everything is properly connected and then loading the software.
If Deluxe Paint made you look, then Futuresound will make you listen.

YOUR AMIGA JULY 1987
QUOTE
Futuresound is a professionally presented product, from the solidly built hardware to the neat manual with large type and clear diagrams. If your hobby stretches to £175, or sound sampling is something you need to achieve on the Amiga, then I am unaware of a better way of performing it.
By Anne Owen

FUTURESOUND is fully IFF compatible (actually three separate formats are supported) your sounds can be used by most Amiga sound applications. Such as Aegis Sonix, Deluxe Music Construction Set, and Deluxe Video Construction Set from Electronic Arts.
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FRONT DESK

Migent moves into Desk Top Publishing



A large area of exhibition space was given over to Desk Top Publishing at the PCW Show. With the enormous amount of DTP packages flooding the market at present, it is difficult to sort out the outstanding from the dross.

Two recently-launched packages have caught the eye in particular. For the PC comes *Page-ability* from Migent, a company which prefers to restrict its output in order to maximise its standards of excellence. Page-ability is particularly strong on graphics – the idea is that even using lower-end equipment such as Amstrad 1512 and a dot matrix printer will produce decent results. Considering its impressive graphics capabilities, it looks like a good buy at £199.

Half the price again of Page-ability is *Timeworks*, a DTP for the PC and the Atari ST at £99 including VAT. Extremely user-friendly, it could well become the budget DTP. Further versions are expected soon for the Apple II and Commodore 64. It is fully WYSIWYG, has style sheets, master page, headers and footers, keyboard shortcuts, multiple fonts, point sizes, leading, hyphenation, justification and indents. Text can be imported from Word Writer ST, Word Writer PC, 1st Word, 1st Word Plus and WordStar.

Writing book

The New Writer: Techniques for writing well with a computer is the lugubrious title of a new book from Microsoft Press. Working on the theory that the advent of word processing has enhanced the versatility of writers, Joan P. Mitchell's book tells the reader how to 'think' on the keyboard and explains the ways in which a written document can be made visually appealing.

The New Writer costs £6.95.

Fresh Virgin – more to follow

The first of the Virgin Software range was unveiled at the PCW Show. *Collector's Catalogue* is a database created specially for organising all types of collections. It has five different sorting formats and a base for nearly 1000 items. Collector's Catalogue is available now and costs £49.95, as will all other software in the range.

The next to be released, as predicted in our October issue, is *Shares Portfolio*. Designed to cope with the legion of new shareholders after the "selling off of the family silver" as Harold Macmillan called it, the package will aid instant evaluation of holdings, maintain records and share price movements, and deal with the fiddly arithmetic of rights and scrip issues. Expect Shares Portfolio in December.

Two more in the Virgin Software range will appear early in the new year. *Club Membership* is a database useful for small societies and *Home Budget* is a household accounting package Virgin's Maya Patel hopes will succeed where others have failed because it will be made to look fun, not laborious.

It is thought that future Virgin Software packages will include a program of interest for gardeners.

Cross the tracks

Australians wouldn't give a . . . for anything else, or maybe they need *Tracker* to find it. A tracker is of an aborigine renowned for his ability to track anything in almost any situation and now it is the name of an interactive filing and prospecting PC compatible software package.

Mallian systems, the Australian company marketing the program describes it as 'intelligent'. As well as a database, the program has a one-key time management system, an autodial feature to dial numbers on-screen with a directory, and an on-line back up system to protect your work should the worst happen.

The database itself has a number of interesting features such as optional resident or non-resident mode; it also has search, sort, and four report options. Reports can be printed producing mailing labels, telephone directory and file reports, all of which can be used in conjunction with wordprocessing documents. Keywords allow the report to include or exclude documents from a report of which there are 20. For multitasking, ten databases can be accessed at any one time.

The program retails at £99 from most UK dealers or can be obtained from Millian Systems by calling 0628 770658.

Protect yourself with a hood

Two accessories for the Amstrad PCW are now available from Computing Plus. An acoustic hood for the printer of the 8256 and 8512 costs £89.95. A similar hood for the PCW 9512 printer at a cost of about £120 + VAT will be on the market in the next couple of weeks.

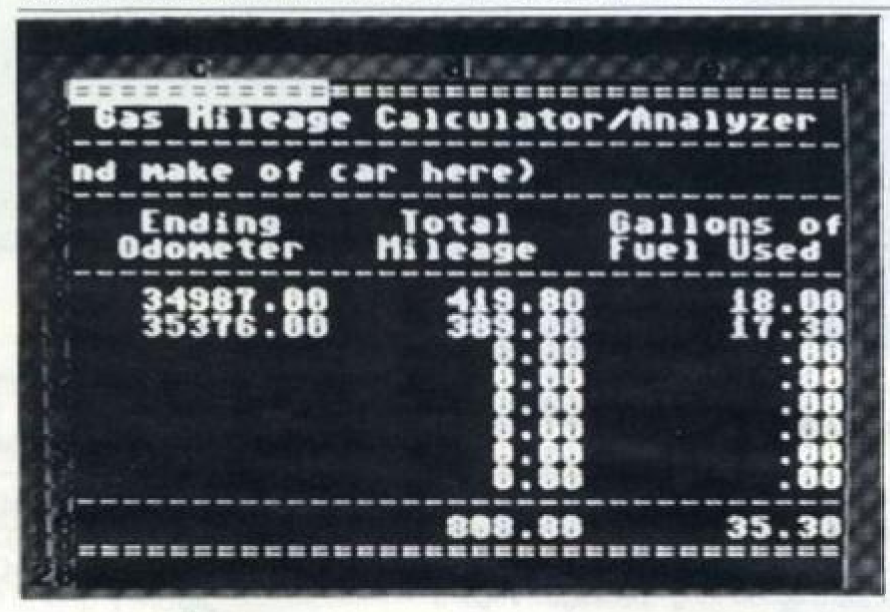
Computing Plus also has a



range of filters for Amstrad machines. There are Amgard filters to fit the screens of all PCWs and PCs. Each screen costs £59.95. Telephone 0993 881912 for further details.

Value Judgement

A WORD-PROCESSOR, A SPREADSHEET AND THREE PRINTING PACKAGES ON THE COMMODORE 64 FOR A TENNER EACH? HOW GOOD CAN THEY POSSIBLY BE? MARK JENKINS PASSES SENTENCE.



• Left: Fuel economy spreadsheet on *ValueCalc.*
• Right: Main menu of *Calendars and Stationery.*
• Below: An example letterhead from *Calendars and Stationery.*


Mr Robot Cybernetics Corp.


While the sophisticated PC and 68000-based systems tend to steal all the glory in the field of serious computing, it mustn't be forgotten that there are less glamorous computers which can still get the job done without the benefit of WIMPs, huge memories or super-fast processing.

We're thinking, of course, of the Commodore 64, which has a decent keyboard and a standard disk system in its favour, though its lack of speed and the 40-column display have always held it back.

Another problem traditionally has been the unreasonable price level of serious software, with some packages costing almost as much as the computer itself. Several companies have tried to break the mould, offering cheap disk software for beginners, but so far none have made much impression.

The *Valuetime* series, handled in the UK by Electric Distribution, is certainly aimed at an attractive price point – £9.99 per disk – but like most other budget disk programs, makes savings by eliminating the instruction manual almost entirely, and placing the necessary information on the disk. This is a mixed blessing to say the least.

WORDS

The word processor, *ValueWord,* is a good example. The manual itself only tells you how to boot the program and load document files; all the acual instructions are on the help pages (accessed with CTRL/H) and on the document file INSTRUCT.

ValueWord bears many resemblances to the Commodore word processor, *EasyScript.* Like EasyScript, it has a status line at the top of the page, giving the current cursor position, control status, plus a number of options each time you go into command mode by selecting a control key. Unlike Easyscript, rather than wrapping around at the end of a line, ValueWord scrolls the screen until you have reached the limit of 255 characters, then flips to the next line, which can be disconcerting.

Your first choice on booting the program is whether to have a flashing or static cursor. The next is the length of line; what you're not told is whether this refers to the length of the line on the screen, or in the finished document, so almost immediately you have to go to the help page to find out what's going on.

The help page is simply a list of control keys and their functions. More useful is the INSTRUCT document, which gives fuller explanations of the functions, and should be printed out and used as a manual.

All the obvious functions are included; cursor to top of screen, cursor home, insert and delete character, set margin, set line length, proofread document and so on. The Function keys control more powerful options such as line insert/delete, save, load, catalogue and print document, set or clear tab, change screen colours and skip page.

ValueWord's best feature is the 40,000 word spelling checker, included on the program disk. Though it takes a good ten minutes to "proofread" a four-page document, it will then alphabetise all the words (useful for compiling indices), and display all dubious words at the top of the page. You then have to opt to accept the words as they stand or enter a replacement. You can't, however, update the dictionary.

ERRORS

ValueWord is very well error-trapped, asking for confirmation before any radical actions like exiting to Basic, erasing a document or formatting a disk. Another good feature is the provision of a number of example files such as a spelling tutorial, punctuation guide, letter formats, and correct salutations – so you'll always know how to address your "Congressman, attorney or the President"!

Possibly the poorest-documented feature of the package is its printer support. On selecting PRINT DOCUMENT, a dialogue box allows you to enter the secondary address number of your printer, and to choose whether you want the text justified or double spaced, whether the pages are numbered and if so from what page, whether the output is Commodore or normal ASCII, and whether your printer is using tractor feed or single sheet feed. Any other document formatting is done in the editing stage, where "check marks" can be inserted to change the format of the text as many times as you like within a document.

Aside from these minor niggles, and the lack of more advanced functions such as mail merge, search-and-replace and block move, ValueWord is a neat package; think of it as an advanced text editor

rather than a cut-down word processor and you'll have a better idea of its ideal applications.

One problem is a marked difficulty in loading files using the 1541. *ValueCalc*, the spreadsheet, has a better instruction manual, though it still only amounts to six pages. Like most spreadsheets, ValueCalc is simply an empty grid, with each position cross-referenced by number and letter, into which you can enter numbers. The numbers can then be manipulated according to user-defined formulae, making it possible to use the spreadsheet for anything from balancing your cheque book to sophisticated financial control.

ValueCalc has 64 rows and 64 columns, giving a total of 4096 cells available.

Let's Make Calendars & Stationery
tm
MAIN MENU
Calendar
Stationery
Printer Setup
Exit to BASIC
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Use CRSR to move, RETURN to select

Twenty of the rows and four columns are shown at a time on the screen display. At the top is a reminder of the contents of the cell in which the cursor is sitting.

The cursor keys are used to scroll through the spreadsheet, and SHIFT/CLR will return you to row 1 column A.

Three types of information can be entered into the spreadsheet; numbers, labels and formulae. If a value you want to enter is larger than the cell, you can use the WIDTH command to expand it. Information is entered simply by selecting a cell pressing RETURN and typing in the information, which appears at the top of the screen and is transferred to the cell when you have finished. The program automatically decides whether you have entered a number or a label (though you can still use numbers in labels, by enclosing them in quotes).

FORMULAE

To enter formulae, select a cell and press =. Say you have selected cell B3; if you then enter the formula B1 + B2, the spreadsheet will add together the numbers in B1 and B2 and place the result in B3.

ValueCalc can, of course, perform more sophisticated calculations. It will cope with the four basic mathematical functions, exponentials, the sum of a range of cells, and the average of a range. Parentheses can also be used to alter the order in which calculations are performed. Cells can be cleared and rows or columns inserted and deleted using the function keys. You can also copy the contents of one cell to another.

There are three useful sample spreadsheets on the disk; business expenses, petrol ("gas") and household budget. Looking at these explains much more clearly than the manual just what can and can't be done with ValueCalc.

The printer output routine is as inadequate as that of ValueWord, but I had no difficulty in making it work on an MPS-801. You can print out either an entire spreadsheet or a list of formulae. The main drawback to ValueCalc is that its mathematical functions are very minimal, and there is of course no facility for anything fancy like generating charts and graphs. For this sort of function you have to spend a good £70 – £80.

However, if you can live with these limitations, ValueCalc is a very useable program, ideal for spreadsheet neophytes.

More fun, though, are the three *Printware* packages in the Valuetime series. These bear an uncanny resemblance to Broderbund's *Printshop* series, distributed over here by Precision, but are of course a quarter of the price. Each of the packages is like a module from Printshop; one allows you to design and print calendars and letterheads, one greetings cards, and one banners and signs.

Each package is driven by a series of menus. In *Calendars* and *Stationery*, for instance, you first set up your printer, either choosing from a list or entering the appropriate control codes. You then enter either the Calendar or Stationery routine. There is a choice of over seventy graphics icons, including something suitable for births, marriages, deaths, parties, Halloween, Christmas, bar mitzvahs, birthdays, offices, workshops, holidays, festivals, concerts, and science fiction conventions among many others. These can be previewed on the screen, then placed in a choice of patterns – left, right, in a row, top or bottom and so on – before you go on to the text.

FONTS

There are six fonts to choose from, including a nice brush script, a clinched "computer" font and newspaper-style lettering. Having selected a font, you can place text at the top or bottom of the page, justified left, right or centred, in solid, outline or 3-0 styles. The program then gives you a screen preview of the finished document which can be printed out.

The printer routines here are much more sophisticated than those of the ValueWord or ValueCalc packages, and practically anything can be made to work with the right interface. Having said that, I had enormous problems with the MPS-801 until I realised that the program was sending it an unnecessary line feed, which can be switched off.

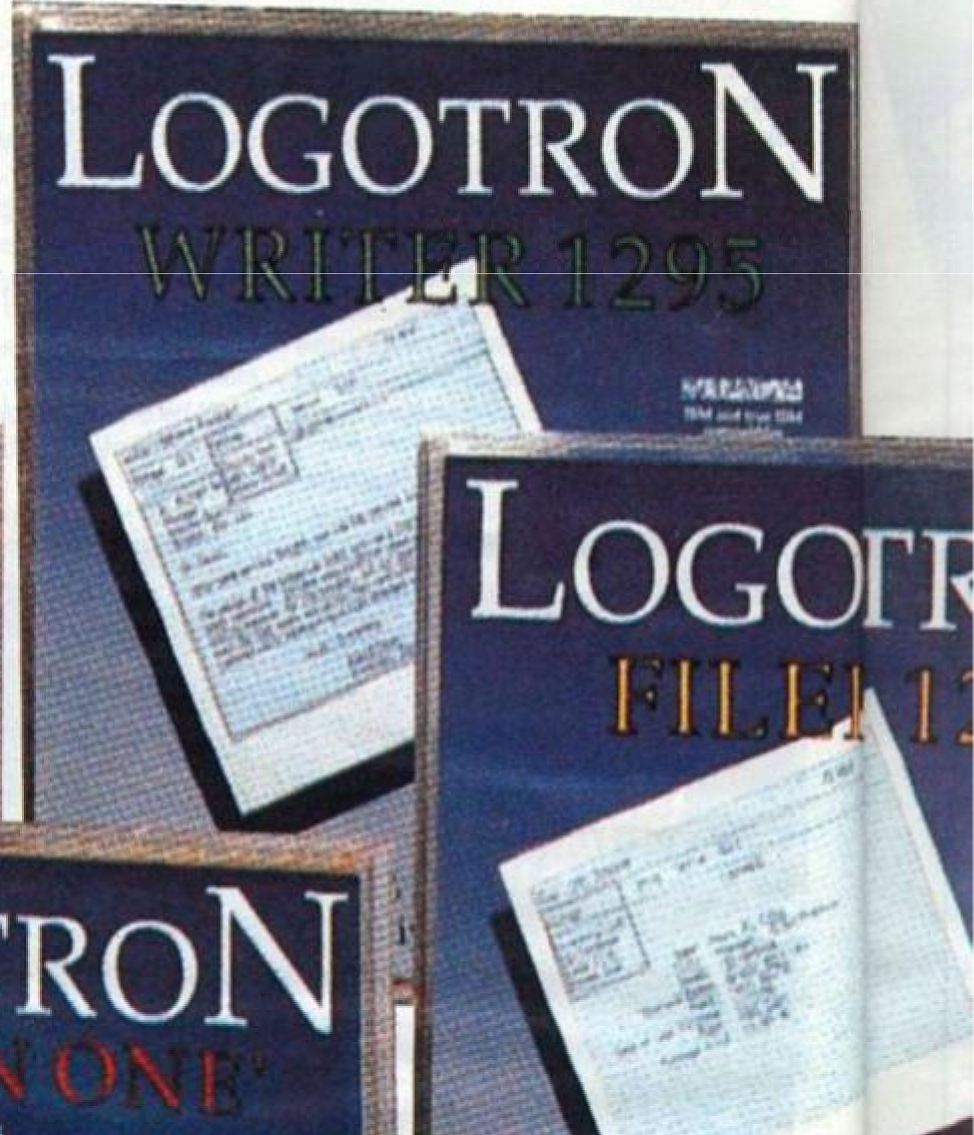
Weekly and monthly calendars can be produced for any year you require; again, these can be decorated with a series of graphics and mixtures of text fonts.

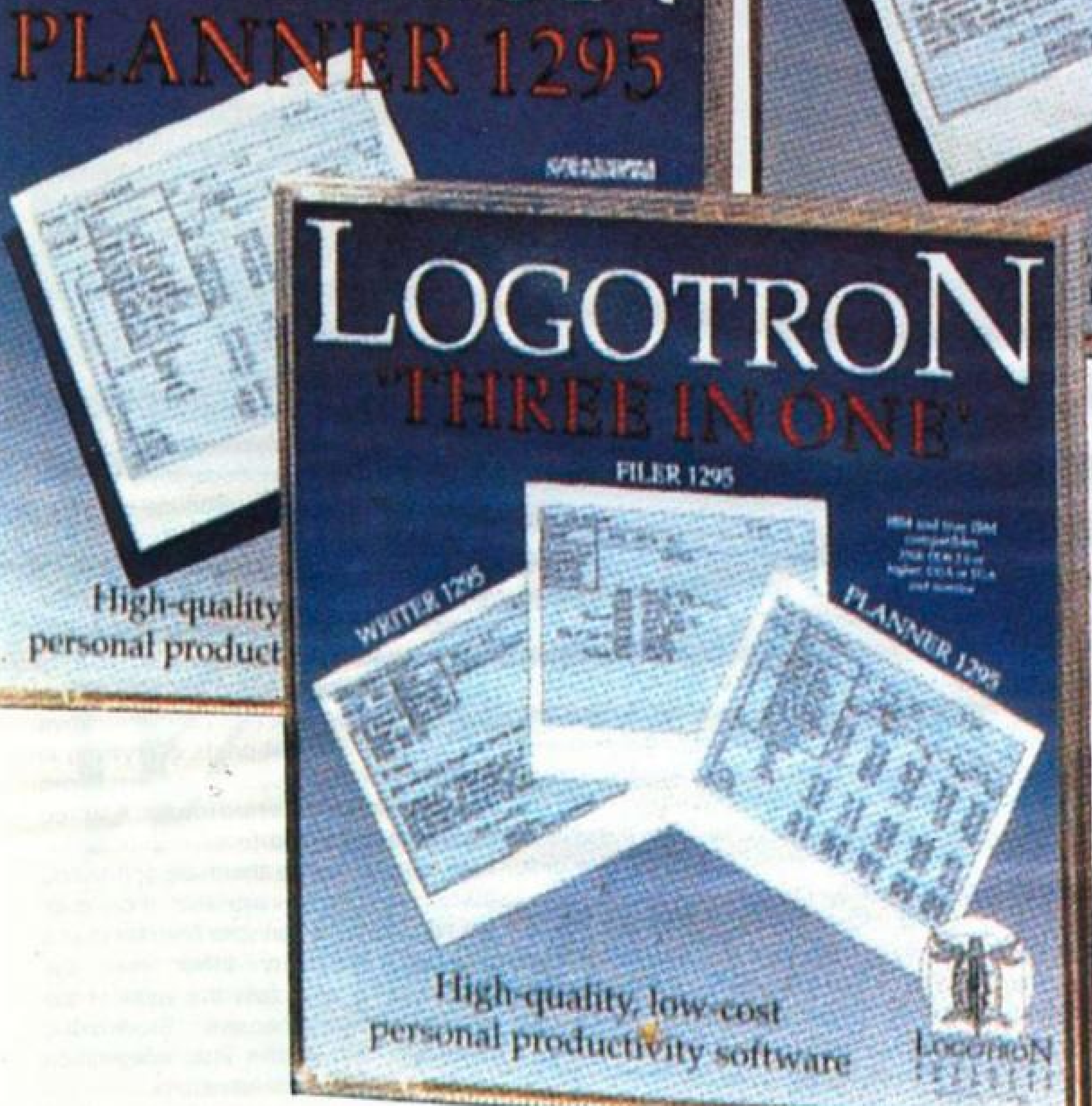
The *Signs and Banners* package provides another seventy graphics in three sizes, eleven decorative borders and six fonts. It can produce diagonal, square or customised combinations of graphics and text for signs, and banners the length of which is only limited by the number of sheets your printer can handle. The last package, *Greetings Cards*, is very similar to Signs, featuring the same number of graphics, fonts and alternative layouts. However, it prints everything in the top left of your paper, so that it can then be folded into a card format. All three packages allow you to save formats for later use, but while there are apparently extra graphics disks available, there is as yet no way to design your own fonts and graphics. In every other way the Printware series is fully the equal of the much more expensive Broderbund Printshop, and with a little imagination can produce very useful results.

The Valueware series certainly offers value for money, and although each program has limitations they perform as required. Another reason for holding on to that 64 for a good while longer.

Products: Valuetime disk software
Machine: Commodore 64
Price: £9.99 each
Supplier: Electric Distribution, 8 Green Street, Willingham, Cambridge, CB4 5JA. Tel: 0954 61258

LOGOTRON HAS PRODUCED THE CHEAPEST PC SOFTWARE EVER SEEN IN THIS COUNTRY. MARTIN CROFT VOICES HIS APPROVAL.





REALLY SAVING SOMETHING



Through the years I have seen a good deal of business software – some of it excellent, most of it acceptable and some absolute trash. I have always found it difficult to be excited by what I have seen on-screen. One spreadsheet is, after all, very much like another. The same applies to wordprocessors and database but this one is different; it kept my attention from the outset.

The big news is not inside the package, it is the price. PC owners who have been around for two years might remember the days when a piece of software cost £100 or more. I am not talking only of business programs – I mean games as well. The problem was, of course, that the IBM PC was, outside the U.S., a business machine and inside the States, while it was very popular as a home computer, people could still afford to pay large sums for software.

Now, with the introduction into the market of PC clones, brought by the good offices of numerous anonymous Taiwanese and the singular and rather less anonymous Alan Sugar, the PC has become relatively affordable. As a result, PC software has also fallen in price to around only £20 for some things.

Now Logotron offers three pieces of software for the IBM at a remarkably reasonable price. The three programs are *Writer 1295*, a word-processing package; *Filer 1295*, which you can use to create databases of useful information; and *Planner 1295*, a spreadsheet package. The price is £12.95, which explains the 1295 after the program names.

Before you have a heart attack at the thought of IBM software for only £12.95 I should point out that you can also obtain all three programs in the same package for only £29.95.

The fact that the same three programs are also available for the Commodore 64 and 128 is likely to be of somewhat less importance to Commodore owners, already accustomed to a good supply of relatively-inexpensive software. They should still pay attention, though, as each of the programs separately or as Three in One is still a bargain for them as well.

The three disks in the Three in One box must have cost a pound or two. The plastic box also cost money and the printing of the cover and the admittedly minimalistic instruction sheets must have added to production costs, plus the fee to Spinnaker Software in the States for licensing the three products, so it becomes obvious that Logotron is banking on selling a vast number of the packages.

While the price is of distinct relevance to a review of a piece of software, whether or not the publisher will make a profit has less bearing on the central question of such a review – how good is the program or, in this case, the programs?

Spectrum

I cannot claim to be familiar with every business program on the market. On the other hand, I have used a number of word processing packages and databases – so I think I am qualified to judge.

If your previous experience of software packaging has been confined largely to Spectrum packages, you might well be impressed with the little plastic box for the three titles. On the other hand, if you have been raised on a diet of U.S. IBM PC packages you might be somewhat disappointed at what you see. That is the whole point – PC software at a Spectrum price. Three in One is a classic example of keeping the costs as low as possible, passing the saving to the consumer and hoping to make a profit by selling in large volume.

"Three in One is a classic example of keeping the costs as low as possible . . . and hoping to make a profit by selling in large volume."

Inside the Three in One box are three discs, one for each program, and an information sheet, again one for each program. Note that it is an information sheet, not booklet. With this package, everything you need to know about each program, initially at least, has been put on two sides of A4-sized piece of paper. It is difficult to decide whether anything important or interesting has been omitted from the instructions, since you have to discover it by accident. Remember, though, that if you had a massive instruction booklet telling you the wonderful things the program could do, there woud be no guarantee it covered everything and you would be paying through the nose for it.

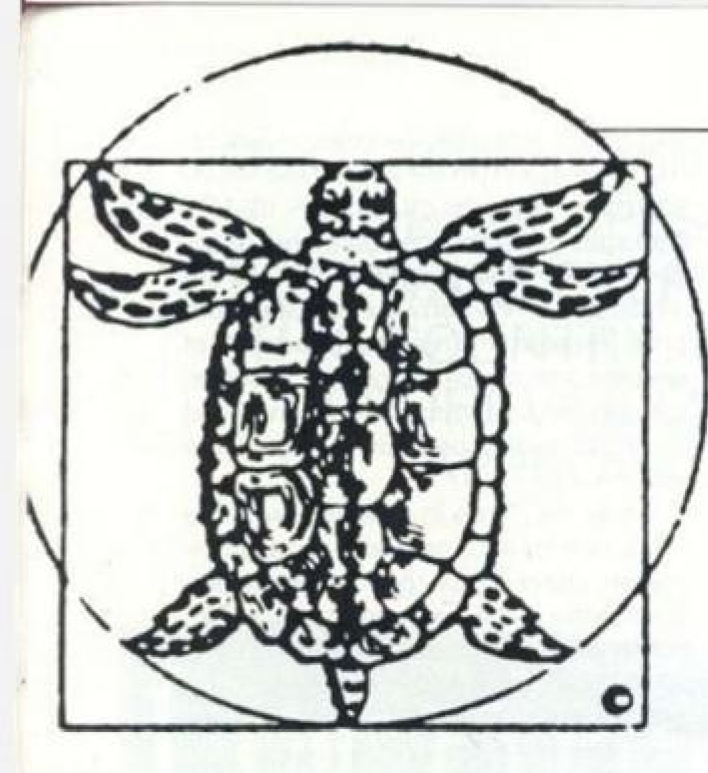
Loading

Loading the programs on to a PC is easy. Loading them on to a hard disk version is not so easy. The way you are supposed to do it, according to the instruction leaflet, is not the way you have to do it and I had to enlist the help of an expert who had no problems and soon had all three running satisfactorily. This may, of course, have been the result of our rather odd system, networked NorthStars with PC-DOS emulation or something like that.

Writer 1295 was the first of the packages at which I looked, mainly because it is the one I could visualise using most. It has nothing very original in it but we should not expect that at the price, should we?

Using it is simple. The first thing you get is a main menu, with a number of options on it. EDIT lets you edit a file; STORAGE lets you create directories, erase files you no long need, format disks, load and save: OPTION lets you search for words or phrases and replace them with others, preview a document before typing it, and use the word-check facility; SET-UP lets you create letter and document templates and re-arrange the screen layout to suit you.

If you do not know what PRINT and



"... the 1295 series should satisfy 80 per cent of the computing needs of 80 per cent of U.K. small businesses."

◀

QUIT do perhaps this is not the program suite for you. To use the main menu, you move the cursor with the left and right arrow keys until the command you want is highlighted, then hit the down arrow key; that will pull down a secondary menu, with the various subsidiary options listed. You can also access the main menu commands by typing the first letter of each one.

Once you are in editing mode there are a few things you can do. You can move the cursor round with ease, line by line, word by word or even to the beginning or end of the document, a common enough command in most wordprocessing packages but one sadly lacking in PCW *LocoScript*. As with other packages, you can shift round copy with ease using the cut and paste commands. There is not much point listing all the things you can do with Writer 1295 – suffice to say that it offers everything I might need from a word processor or at least everything I can think of off-hand.

In the edit mode there are two more menus which you can access. One controls print functions like underline, compress text, merge, justify, centre and so on and the other lets you perform useful tasks like cutting to or pasting from memory or file or deleting entire blocks.

One important point to note about Writer 1295 is that the whole document is held in RAM. That might prove to be a problem with some of the lower-end-of-the-range clones with limited RAM but with most machines it should help speed things a great deal. If you have limited memory you can always chop your document and chain the files together again when printing. With anything more than the minimum memory you should be able to fit a considerable amount of text on one file and, because it is all held in memory, you save a good deal of delay when jumping around a document.

File

According to Logotron, a machine with 640K can use almost 400K for a file, equivalent to around 66,000 words. It will take only a second to move from the end of that document to the beginning, although the other way round will be somewhat longer, around 17 seconds. Obviously, the shorter the document the quicker you can move around it.

File 1295 is the database program. The way it is set out is identical to Writer 1295, with a main menu of options, each of which is a subsidiary menu which can be pulled down and utilised using the cursor keys.

There is not much one can write about a database program without going into the workings of it at length; suffice it to say that you can use it to create lists. The usual things you might want to list are names and addresses. You can create new databases, edit existing entries, add new entries to an existing database, and erase records.

More important, perhaps, you can search for entries which conform to certain common factors. If you ran a mail order software company and you wanted to tailor the promotional material sent to each customer to the type of computer they had, you could order Filer to print-out a list of Commodore owners, Apple owners and so on.

Program

You would have had to enter the type of computer owned in each record when you typed them in. With any database program, though, you have to be careful designing the format for the record cards you intend to use.

Such databases do not have to be just lists of names and addresses. You could compile a catalogue of the software programs you owned, or your books or LPs. I have a sizeable collection of books on military history. I would not mind having a list of them on file to jog my memory and I could also set up the records so that I could print-out which ones deal with a particular period or part of the world quickly and easily.

If you have both Writer 1295 and Filer 1295 you can mail-merge your letters. As anyone who has tried to put together a mailing list for any purpose will tell you it is not the typing which is the difficult part – it is obtaining the names and addresses in the first place.

Now for timely word of warning. Some people dislike having their names on mailing lists, or lists of any other kind for that matter. From November 11 if you have such a mailing list on computer and it is used for anything other than, say, sending reminders of the next meeting of your local hackers' association, you will probably have to register with the Data Protection Registrar who is in charge of putting together a database of other people's databases.

If you have personal information about other people on computer files, they are entitled to look at the information to see it is correct. If you have such files and your name is not on the Registrar's list, you could be in trouble.

The third program, Planner 1295, uses the same system of main menu and pull-down subsidiary menus as the other two programs. It is a very specialised word processing package which enables you to create profit and loss accounts and analyse figures with ease. The screen has already been formatted for a basic spreadsheet, with rows and columns set up. You can alter them to suit your needs whenever you want.

Calculations

Planner also performs various calculations. If you have entered the number of widgets you have sold in the first column and the price for which you sell each widget in the second, you can tell it that the figure you want in column three is the product of columns one and two. You can be more complicated if you wish and there is a wide range of instructions you can give the program.

I admit that Planner is the one program of the three I am least likely to use as I seldom need to work out such abstruse financial information but for a small business I believe the program might be very useful.

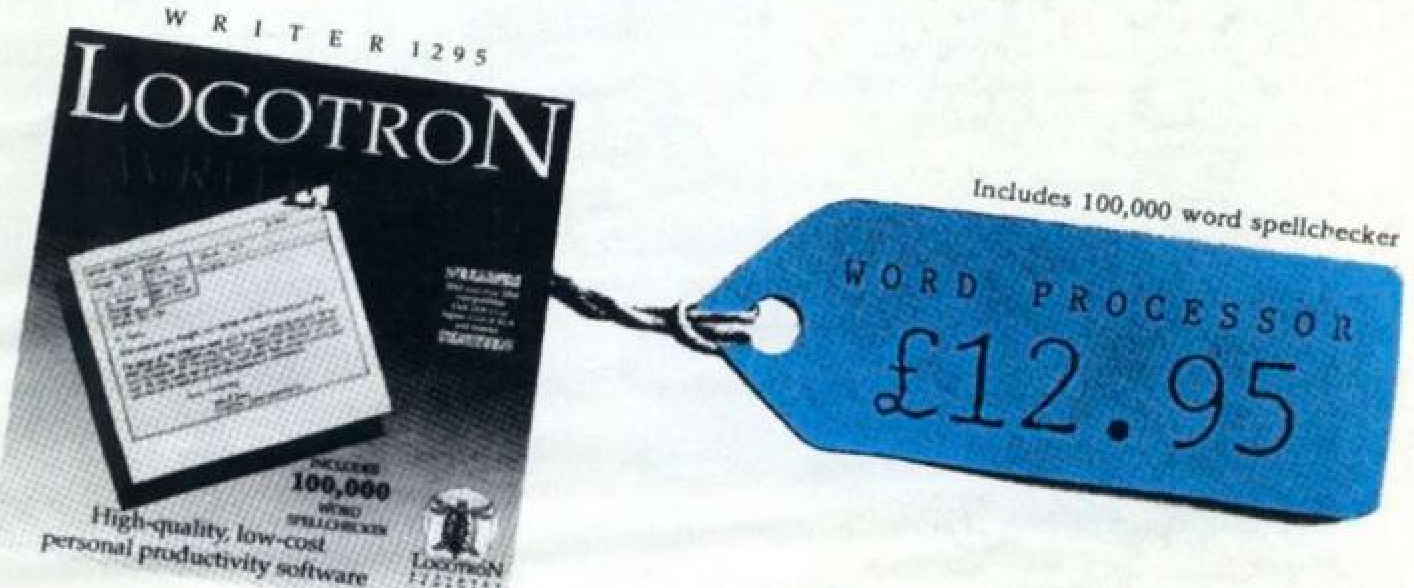
The great advantage of the 1295 series, though, is that you can put the programs together very easily. You could work out some costings for a new project using Planner, add it to a report on the ideal you have prepared using Writer, and then send it to various people whose names you have fed into a database created using Filer.

Logotron is not modest. While it recognises that Writer, Filer and Planner are not comparable with products like *WordStar* and *Lotus 1-2-3*, it claims that the three programs in the 1295 series should satisfy 80 percent of the computing needs of 80 percent of U.K. small businesss. Perhaps so. All I know is that I would not hesitate to buy both Writer and Filer. They are excellent programs which, so far as I can see, hold their own against packages 10 times the price.

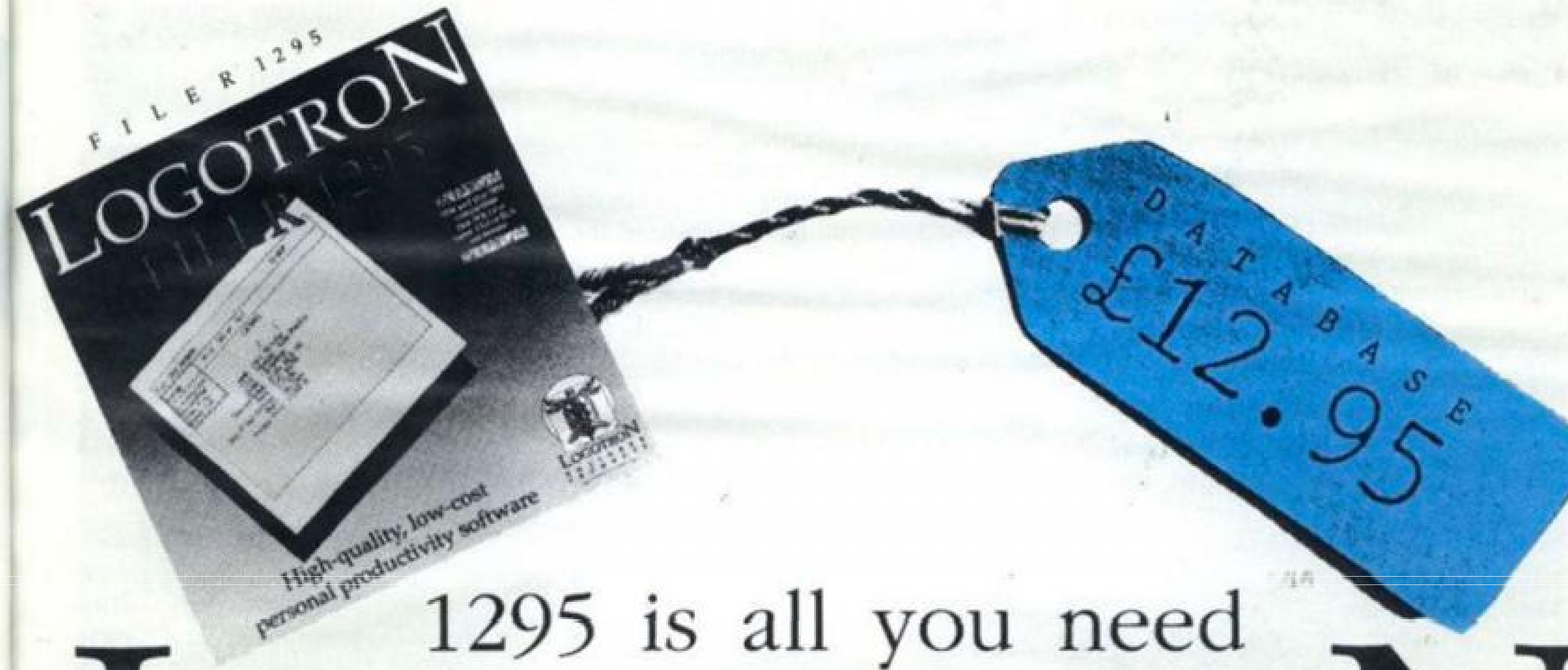
I am less sure for my purposes but I can see that it would be invaluable to a small business.



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EASY PEAZY

The latest contender to join the low-cost PC race is the rather annoyingly-titled *Eazy PC* from Zenith which is what marketing people refer to as an "entry-level machine". What this probably means is that the Eazy PC is designed for people who had not previously owned a computer.

At this end of the market first impressions count. Zenith is one of the world's largest manufacturers of PC compatibles and has neatly packaged the Eazy PC in a single box. After unpacking the machine, you simply plug in the keyboard, connect to a power supply and your Eazy PC is already working. This is an authentic plug-in-and-go product.

On a desk-top the Eazy PC sits extremely prettily and it is clear that much thought has gone into the design – the same cannot be said of many other comparable budget-priced machines. Particularly pleasing is the absence of trails of wire and cables. In fact, the Eazy PC is strikingly and stylishly compact in appearance and this should attract those people who are looking for a PC which can double up in office and home.



ZENITH HAS ENTERED THE LOW-COST HOME MARKET WITH THE EAZY PC. ROBERT LANDER ASSESSES THE FIRST MACHINE WITH A 3.5 INCH DISK.

3.5"

The Eazy PC has one major surprise to spring – it relies on 3.5" disks. There is no doubt that 3.5" disks represent the future, not least because IBM has also introduced them in its new range of machines. This size has several advantages compared to the more familiar 5.25" floppy. Most obviously, a 3.5" disk has a sturdy plastic casing, guaranteeing extra resilience and a longer life in the hazardous conditions of office or home. In addition, one of these disks can store 720K of data – twice as much as a conventional 5.25" floppy.

Zenith deserves considerable applause for its decision to choose 3.5". It implies that Zenith has not assumed that a budget price excludes at least a taste of state-of-the-art technology, and this sort of thinking can only be good news for Zenith customers.

The Eazy PC arrives with two disks containing the MS-DOS operating system as well as the MS-DOS Manager program, accompanied by solid-looking manuals. The MS-DOS Manager is a new program – Zenith is the first manufacturer to bundle the program with one of its machines – and resembles a simplified, much stripped-down version of Windows. MS-DOS Manager looks like a smart program but probably would not be that useful. The Eazy PC also has a simple configuration program, and a tutorial to introduce you to some of the intricacies of MS-DOS. The machine exists in three models – with a single floppy drive priced at £499, with two floppy drives at £599, and with one floppy and a 20Mb hard disc at £799. Prices include the MS-DOS software.

What do you get for your money? In terms of main memory, all three models have 512K RAM as standard, which is more than adequate in order to run most PC software. If you decide that you need to upgrade to 640K, then this expansion can be done very easily by inserting a 128K RAM module. Alternatively, you can choose to insert Zenith's so-called Computerised Phone System RAM module which upgrades memory and also provides communications software.

It is important to emphasise, however, that once you have inserted one of these RAM modules you have exhausted the Eazy PC's capacity for expansion. There are no free slots intended for the wide range of add-on cards from third-party suppliers which are now available. So, if expansion via slot-in cards is part of your plans, then you might want to examine other machines in Zenith's range. The Easy PC assumes that you will require nothing more than its parallel printer and serial mouse interfaces. In other words, the Eazy PC is a product designed for anyone who wants to buy a basic PC and stop there.

CHANGE

Whether there are people who really want to do this remains to be seen. My own impression is that Zenith has underestimated the ambitions of PC buyers who surely attuned to fast-moving technological change and so interested in a machine that gives them flexibility and the chance to respond to that change.

Does the Eazy PC have any inadequacies to which you should be alerted? Inadequacies is too strong a word but I did discover one flaw in the performance of this machine. The machine supplied for review had two 3.5" drives and no hard disk. The performance of the drives left something to be desired. Any operation which involved reading from or writing to disk – when running WordStar, for example – slowed the machine noticeably. I was disappointed by the performance of the drives, especially as the 8088-compatible chip at the heart of the machine did its job very well. Since I have not seen the hard disk version, I cannot comment on the performance of the Eazy PC's Winchester disk.

MONITOR

The monitor itself is a 14" monochrome screen of excellent quality. It offers good resolution and CGA compatibility. I ran several games on the Easy PC and its screen was lively and responsive, handling the graphics extremely briskly. This is one area where the Eazy PC exceeded expectations and should, again, appeal to users looking for a machine which will allow them to work and play.

The final feature which deserves special praise is the keyboard. This is a weak point in many budget-priced clones but the lightweight keyboard of the Eazy PC has a nice feel to it. There are lights to indicate when the Caps Lock, Num Lock and Scroll Lock keys are depressed.

In conclusion, if you are looking for a genuine plug-in-and-go PC which has an attractive, compact design, then Zenith's PC is worthy of your consideration. The inclusion of 3.5" drives is a pleasingly innovative touch and the machine has a high-performance monitor. On the other hand, if your plans are more ambitious and you want to buy a basic PC which you can proceed to expand and upgrade, then the Eazy PC will not match your needs.

YOU


ER 1987

PCW DTP OK?



IT DOESN'T TAKE EGA, VGA, HERCULES AND LASERS TO MAKE A SUCCESS OF DESK TOP PUBLISHING. THE HUMBLE AMSTRAD PCW IS QUITE SUFFICIENT, AS MIKE GERARD REPORTS.

There have been articles in the computer press which have adopted a rather sneering attitude towards desk-top publishing, suggesting it is just the latest craze, something to write about but which does not mean much to most computer users. That seems to be a matter of jaded journalists trying to adopt a superior attitude, since anyone who keeps their eyes open can see examples of DI publishing wherever they look, showing that there is a demand for and an interest in the subject across a wide range of micros.

PCW because of its low cost, high sales and suitability for small-scale publishing for those who have no need for the extra quality of laser-printed output. The PCW printer may not be the best dot matrix printer but the results from its high-quality printout are acceptable for anyone interested in producing leaflets, small posters, newsletters or programmes for local events. In the last few months I have seen examples of all of those which have been produced on the Amstrad PCW with one of the various DTP packages available for that machine.

Some of the examples were very imaginative, with users aware that you can combine the PCW DTP facilities with other options. For illustrative material you have no need to be limited to your feeble drawings or those available on the many snip-art discs becoming available. You can still produce your own basic pages and paste-in photographs before handing over the results for professional printing. I saw a very effective programme for a local concert which had been produced in this manner, with photographs of the musicians incorporated in the text.

The Dixons chain is also obviously aware of the PCW/DTP link. Since September its shops have been bundling a free copy of The Electric Studio *Newsdesk International* package with every PCW it sells. It seems that this is the best of the packages available, being easy to use and very versatile, its main disadvantage being a rather poor manual.

Set against that, however, is the fact that it is only part of a range of compatible products all published by The Electric Studio which show that the company is firmly behind the expansion of DTP on the PCW.

Lightpen

If you have not been given a free *Newsdesk* by Dixons, it costs £39.95 on its own, although there are various other buying options. Add a lightpen and the joint price is £69.95, while a combined Newsdesk/mouse package costs £89.95. The addition of a lightpen or mouse is not for novelty value. Their advantages will soon become apparent if you do much graphics work and that applies not only to *Newsdesk* but to all the other software I shall mention.

You can spend £99.95 on an Electric Studio video digitiser which will allow you to incorporate still frames from a video camera or video recorder into any publication produced using *Newsdesk*. Having captured the frames, you can manipulate them in the same way as any other image – you can invert them, stretch them, add speech bubbles, whatever you like. Produce your own *Private Eye*, with Mrs. Thatcher or Jeffrey Archer on the cover, and there are only the copyright and libel lawyers to watch for.

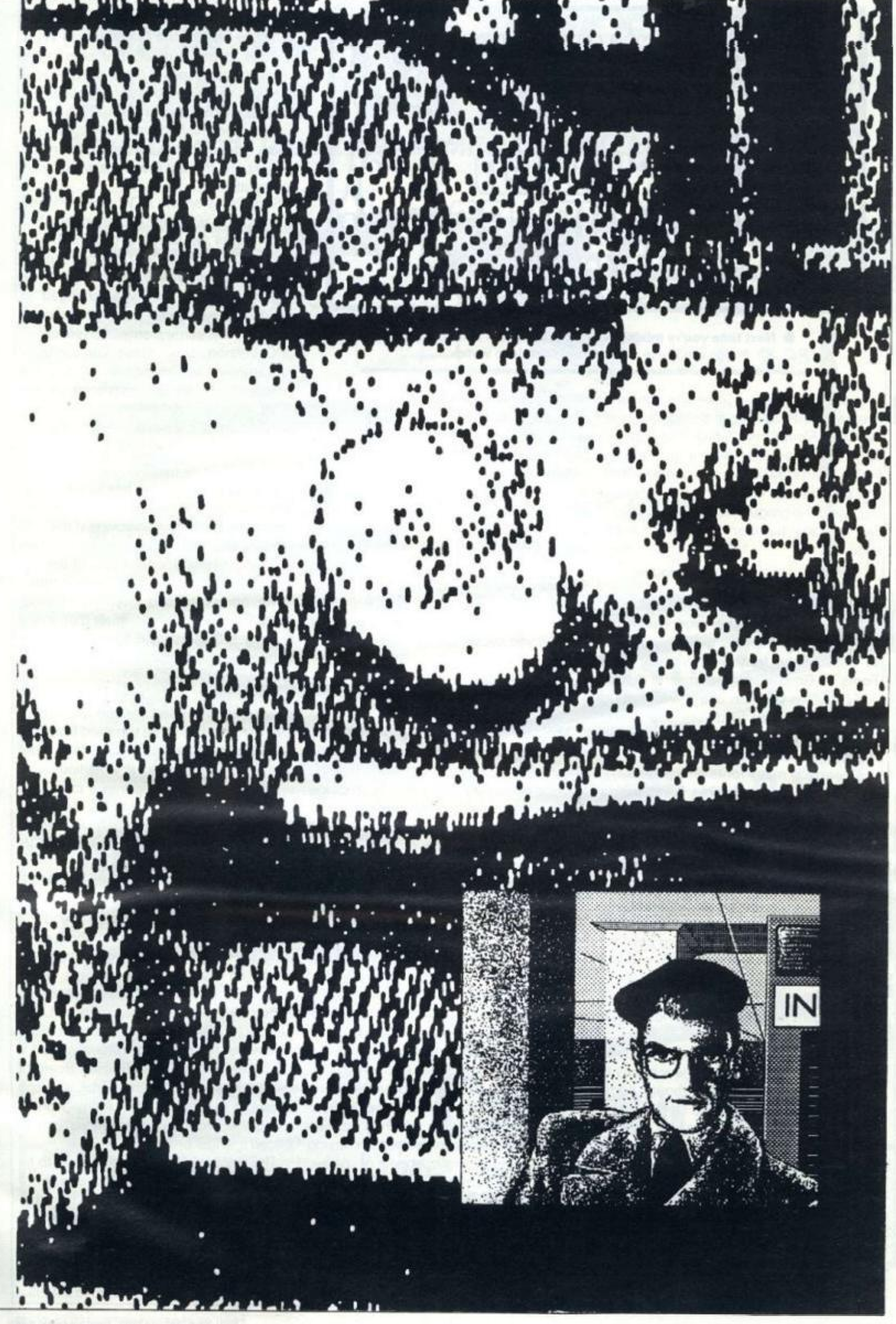
In addition to the peripherals, The Electric Studio recently added to its range and broadened the appeal of Newsdesk with the publication of six discs, costing £9.95 each. One is *Font Library*, which includes 12 fonts to add to the seven already available in the original program. The new ones include a very eye-catching and unusual Celtic font, plus Italics, Bold, Sanserif and others. There are also five *Snip Art* discs, two covering general subjects and the other three aimed more specifically at certain potential DTP markets.

Each disc is double-sided and contains between 50 and 70 images. One is a travel disc, full of trains and boats and aircraft as well as holiday brochure-style headlines; another is leisure and the third is nature, covering everything from a parsnip to a parrot. A sports disc, too, is on the way.

It is interesting to use The Electric Studio programs alongside the Mirrorsoft *Fleet Street Editor Plus*, as Mirrorsoft has just released a new disc to enhance its original program, *Fonts 'n' Graphics*, which, ast £19.95, does not compare favourably to The Electric Studio one in terms of pricing. If you are already committed to *FS EP*, however, you will probably want to buy a copy. The disc includes a font editor, allowing you to sesign your own fonts or put little graphics characters on to any of the keys if you wish, although a font editor is already included as part of the program in both *Newsdesk International* and in the Database Software *The Desktop Publisher*, which retails at £29.95 and was reviewed by John Ryan in the August, 1987 issue.

● **Both the images facing were created on an Amstrad PCW.**

Newsdesk scores over its rivals in using a 32 x 30 grid for font definition, giving much finer detail than the 16 x 16 grid in the other two programs.


IN



● **Next time you're mixing your slugs of scotch and vodka, you too can invite around your friends to watch.**

In addition, *Fonts 'n' Graphics* contains five new fonts which can be incorporated into your *Fleet Street Editor Plus* publications – incorporated with a little effort, that is. With *Newsdesk*, to use a new font you put the disc containing the font into the drive, the program reads it in, and you can mix any number of fonts on each page.

Fonts

The Desktop Publisher works similarly. With Fonts 'n' Graphics, though, you have to transfer the font file physically from Fonts 'n' Graphics to your master disc of FSEP before you can use it and that, in turn, requires you to delete one of the font files already on the master disc to make room for a new one.

Mixing too many fonts on a page is not recommended as it makes the resulting publication look messy and unreadable, so the fact that Mirrorsoft in effect limits you to five unless you are very patient could be seen as a virtue. The virtue to me is having a wide range of fonts from which to choose quickly, as happens with Newsdesk and The Desktop Publisher. The Mirrorsoft fonts are a very practical and unfussy Bold and Compact, a larger hollow Skeleton font, a familiar micro-ish Data font, and a Freehand font which is very elegant in upper-case but looks a little squashed in lower-case.

The Graphics element of Fonts 'n' Graphics is made up of 18 new pages to add to your graphics library, though some of the pages contain only a single image. There is a very good range of cartoon characters and headlines and Mirrorsoft must be commended for the thoroughness of its manuals and presentation.

It is rather ironic, though, that whereas the original ring-bound manual can cope easily with the new add-ons, allowing you to insert samples of the new fonts, the new graphics and the new instructions into their appropriate places, the program deals less satisfactorily with the extensions to its range of fonts. You feel they are almost being bolted on instead of slotting into place.

Master Scan from Database Software, which, while it is not bolted on to the PCW printer, is attached to it to enable you to scan and read images from paper and transfer them to the monitor. At £69.95 it is, like The Electric Studio Video Digitiser, only for people who are serious about DTP on an Amstrad but it will allow you to incorporate a wider range of images and documents into your publications.

Scanner

The scanner clips to the printer head and when you run the accompanying software the scanner will read whatever is in the printer and transfer it as an image on to your monitor. That need not be a graphics image; it could be a document, a magazine article, a map, or anything on a single sheet of paper which will fit into the PCW printer. Once the image of the paper has been captured it can be incorporated into any of the DTP packages and treated in the same way as any other graphics; it can be scaled up or down, rotated or otherwise interfered with in whatever way you choose.

In addition, Master Scan allows captured images to be transmitted by e-mail to any other PCW, making it in effect a miniature fax machine exclusively for PCW owners. Database Software advertising suggests tha it is a cheaper alternative to a video digitiser which is not correct as a digitiser is not limited to copying what is on a single sheet of paper. Despite that rather exaggerated claim, Master Scan is an exciting potential addition for any desk-top publisher.

Everything may change in the next month or so when Advanced memory Systems releases yet another DTP program into what many people must think is an already over-crowded market. Its *Stop Press* program, however, may well prove to be the best of the bunch but as yet it still has to prove itself. The stop press news on Stop Press is that a preview version was to be demonstrated at the Personal Computer World Show, with promises that the finished version was virtually ready. The manuals were due from the printers and the last few bugs were being dealt with.

Stop Press on the PCW was designed by Alex Blok, who also designed the AMS programs of the same name available on the BBC and Amstrad CPC computers, where originally it was known as *Pagemaker* until that was changed to avoid confusion with an American program of the same name. Based on its CPC version, Stop Press can certainly rival anything available on the PCW at the moment and, as demonstrated on the PCW, its versatility seemed to have been carried to this machine.

Bugs

The only reason for hesitation, other than the need to have spent some time using the finished product, is that the CPC version suffered badly from bugs. When released originally, one or two of the features had not been fully-implemented, while others caused intermittent problems. They were minor rather than major but any bug is major if it appears at the wrong moment and causes you to lose precious work.

It has taken AMS several months to release an amended version and one or two features had to be trimmed from it to help debug it. It seems to have been more a case of them being over-ambitious as to what can be squeezed into a computer memory than anything else. Nevertheless, as minor as the bugs have been, it must cause slight anxiety about the PCW version.

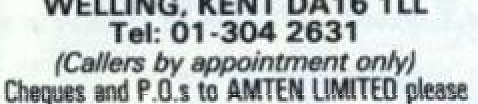
That may prove to be unfair to AMS. The PCW Stop Press could be flawless and stunning but the programs already on the market have had time to show what they can do. The Mirrorsoft program has frozen on me only once or twice, which does not seem too bad, as I have experienced that on rare occasions with LocoScript, too, and it may even be a slight hardware fault. I also recently read a report on an American Bulletin Board of bugs in Newsdesk International, although I have to say that in many many hours of using the program I have never experienced a single problem.

The price of Stop Press has yet to be finalised and no doubt that is in part due to a bout of recent price-cutting on the other DTP packages. With The Desktop Publisher available at a £29.95, The Electric Studio reduced Newsdesk by £10 to £39.95 and Mirrorsoft reduced Fleet Street Editor Plus from £69.95 to £49.95.

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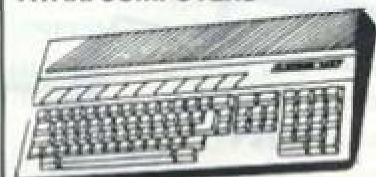
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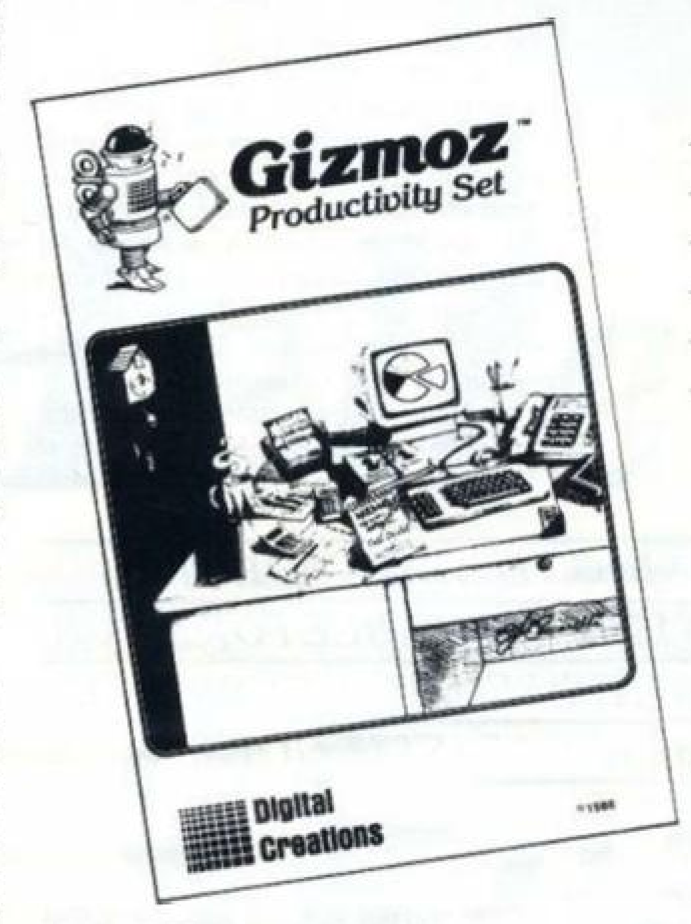
How often have you sat in front of your Amiga and wished you could have all of the most useful desk-bound items inside your machine! With the Workbench operating environment and the more than generous Amiga RAM disc store, there is plenty of space for adding extras to the workbench, be it in the form of hardware add ons, or in this case, as the *Gizmoz* productivity set, a software-based set of programs from American Digital Creations.

With Gizmoz you get an Amiga disk and a manual; the manual is not really important as most of the tools are fairly self-explanatory, being tailor-made for the Amiga WIMP environment.

Gizmoz will operate on all current releases of the Amiga, the Amiga 500, 1000 and the 2000 series. With the 500 and 1000 models it is recommended that you have a RAM disk so that you can transfer all the most useful Gizmoz tools to RAM disk for immediate access. All the tools will work under intuition, so you can happily call up the routines from any other product supporting "intuition".

Being a kind of floppy-bound Filofax, Gizmoz are small programs which can be used from the workbench or even from the CLI. They all support the Amiga's hitherto unused multi-tasking operating environment, so you can have more than one Gizmo active at the same time; that is ideal for using the calculator with the notebook and the graph-plotting utility.

The Gizmoz are all divided into different windows – Applications, Utilities, Tools and so on. While some of them may not be useful immediately, it is always worth having them on hand. A terminal package was the last thing I had in mind for my Amiga – the telephone bills are too costly – but when it became vitally important that I transfer files from one computer to another, the Gizmoz Terminal was ready and waiting.



Calculator

On to a more everyday application, the calculators are either vitally important or just fun to play with. Having a leaning towards programming I immediately selected the programmer's calculator, supporting hexadecimal, decimal, octal and binary number bases and got to work with programming in C with the calculator literally in the background.

Whenever I needed a calculator the Gizmoz one performed faultlessly, especially as it was on hand at an instant's notice. The same could be said for the other tools and options.

Of the more usual types of tool, the others include a new Memo Pad, a Black Book utility with an integral calendar, a Rollodex and a series of very useful programs called Encrypt, Compress, Setpriority and Hotkey.

The Rollodex utility is probably the most immediately useful but it is very unfriendly to use as a file-card-orientated database. The Cuckoo Clock is a fun item, a kind of executive toy for bored Amiga users. In effect the Cuckoo Clock replaces the existing clock supplied with the Workbench disc and although it does not offer anything more than the original, it has an annoying tick, which can be switched off. It also has an amazing piece of iconography; after all, how many times have you seen a moving icon?

The Black Book is an interesting item. It integrates the calendar and the Rollodex to make a complete diary-cum-noteplanner system, similar to packages on the Mac and the IBM PC but more straightforward and down to earth. There is no provision for copying alternative data types from, say, the pie chart into the calendar. As a basic tool, the Black Book is very useful.

Game time is in the form of a Super Life simulation with all the bells and whistles, including colour separation of colonies and a speed control. Super Life is sheer indulgence as you have either large or small colonies and a normal or toroidal growth pattern.

Super Life is interesting in that it is an accurate ecological simulation of pollution and the way colonies can build and die feeding successive colonies. It is a boot-up and relax type of program and I have seen various versions of this particular program. While it is just an executive toy there is always time for a little light relief.

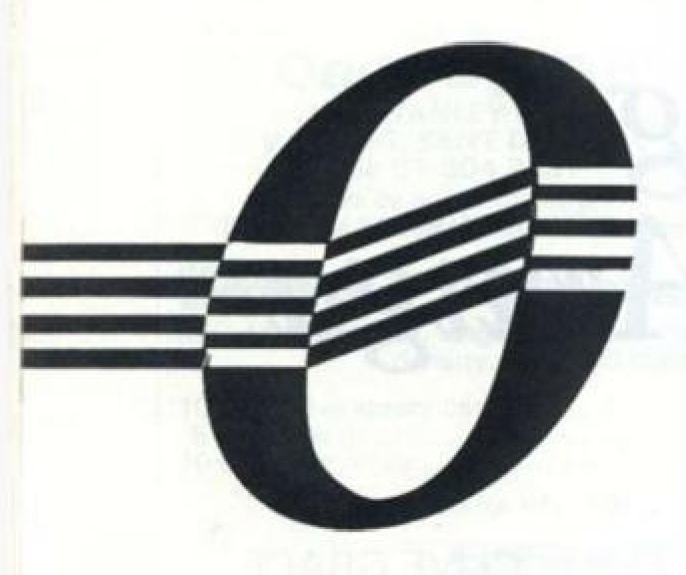
Performance

Of the more serious type of Software there is a performance monitor and a task editor. The task editor permits the user to juggle the tasks inside the Amiga a little like altering the partitions of a mainframe computer.

Gizmoz is more of a fun package than anything else, even though there are some very serious applications. On the whole WIMP environments need a fairly lighthearted approach to computing if you are to succeed with the concept of icons or tools, although some people may call them toys.

On the Whole I found Gizmoz very useful for certain applications. The Terminal and the Black Book system are worth the cost of the package and I am sure the clock and the various calculators will appeal to the more intrinsic Amiga users.

Business users may not be convinced of the power of the Gizmoz productivity set but for my desk at home I would not be without it.



ne justification for buying the new Acorn micro, the Archimedes, is to be able to do something on it not possible with your existing machine. The latest package available for the Arc is a database. There is nothing new in it your existing computer will not have but on the Archimedes it is almost certain to be faster.

Think of those minutes watching your computer plodding through the disk searching for Mr Bloggs' address. A database on a 32-bit RISC processing machine could well be the answer.

Deltabase is in a sense both new and old. There is nothing new about its database abilities but what is different is the speed at which it searches for records. On first booting-up the disk, an elaborate title screen appears with a rapidly-rotating 3-D logo. Alongside it is a menu, the major component of which is the database. After a little whirring on the disk drive you are told to insert the original disk. Minerva advises making a back-up of the original disk and using only that, but, for piracy reasons the original disk is needed at start-up to read the serial number.

SOFTWARE IS BEGINNING TO ARIVE FOR THE ARCHIMEDES. MINERVA IS RESPONSIBLE FOR MUCH OF IT, INCLUDING A DATABASE. SAM GREENHILL LOOKS TO SEE JUST HOW FAST IT GOES.



An extremely useful feature of the manual is a chapter entitled Experimental section. It is devoted entirely to a practical example of how the software should be used. Its use is supposed to reduce the learning curve to a fraction of the time taken normally.

The database works as an electronic card index and can store more than 8,000 records – cards – in any one file. The experimental section uses a demonstration file from the disk, which contains 26 records. After learning how to browse through the records using the arrow keys, it is best to familiarise youself with the automatic searches, one of the main aspects of any database.

You can search for any element of the record, such as a name or location. The record might be an address index and therefore would contain something like the bearer's name, address and telephone number. The program could be instructed to search for all the people living in Manchester. It would use the FIND CARD feature and could use either the syntax 'MANCHESTER', or '*MAN', making use of the wildcard command.

Multiple common criteria is also possible, so the program could search for all the people living in Manchester who are aged 49 and own a blue Fiesta. A list of all the records with the specified common criteria can then either be observed or printed-out.

Each of the 8,000 records can contain up to 256 fields, making the database exceedingly flexible. A field can be defined, so the town could be one field, the name another, and so on. With a file so large, computers would become unbearably slow during searches but with Deltabase it takes only half a second to find the target.

RECORDS

Creating your own set of records can sometimes provide difficulties but with Deltabse, excluding the fact that the delete key is rather slow, it is comparatively easy. Initially you must select the creation menu. From that, you select the 'design format' option and the program places you in design mode. First, though, you are prompted to name your file or, if applicable, load a previously-created one to modify it.

When you have done that the top left-hand corner of a card appears. By pressing CTRL-C the size of the card can be defined, anything up to 200 characters by 200 lines. You enter the words you want to be used as sub-headings. One sub-heading might be 'Name' and another 'Address'. When the layout of the card has been designed it is wise to devide it into sub-sections, or 'fields'. As many as 256 fields can be defined, providing almost complete versatility.

When the card has been allocated its fields the file can be saved or closed. In two attempts it was difficult to discover a way to return to the main menu without loading the whole thing again. It was not until the third time, at the expense of two card designs, that a suitable method was found. Inevitably it appeared that the only way was to press Break, which resulted in returning basic, with the feeling that Break could at least have been trapped for returning to the main menu.

DESIGN

After successful restoration to the main menu, by selecting the 'Add card' option the program provides you with your record design and prompts you to start filling it in. It moves from field to field, allowing you to type only in the space allocated. When the record has been completed it is saved onto disk and your return to the main menu.

By choosing the 'Search/List' option a new menu is displayed, creating plenty of possibilities for searching. The main ingredient of the 10 functions is probably the 'Search for Cards' command. When entering any criterion the program reads

Delta Helter Skelter



the file for any matches. That is different from the 'Browse Find Card' search because it does not display the records but only the relevant criteria in the form of a list. It also provides the information for far more detailed searches

Unlike most other databases, Deltabase can function a little like a spreadsheet. When a database has been set up to contain numeric information it is useful to be able to perform calculations within the record. To calculate a person's age from a given birth date a small mathematical function would be required. Deltabase allows such a task in the form of a small program within the database. It provides the line numbers and you type-in the desired line of calculation. Then, when a card is being added, it produces the answer automatically, in this case the age, which it displays in the correct position beside your already-defined position for its title: 'Age'.

An extremely useful feature of the database is the ability to use files from other databases. It can load files from any of *Viewstore, Betabase, Uniform, Mini-office, Datagem* available on the BBC any of the Interseries, or a general ASCII file. It can use files from the BBC version of Deltabase, *System Delta*.

Deltabase is menu-driven, providing both power and simplicity to the system. It also offers pop-up help screens to aid understanding of specific keypresses and menu options. Another useful feature is an on-board calculator accessible from almost anywhere. It is also possible to execute commands from within the system.

Deltabase permits records to be transferred between files, making extra fields available after data has been entered, which could be very useful. The user can re-create the physical size of a card months after it has gone into operation to add some more information or to reduce its size to gain more overall space; the possibilities are endless. It is very well presented with a good choice of colours which you would not necessarily find on another machine. It defaults to Mode 12, which allows a range of colours in combination with small writing to achieve a good effect. It also allows mode change to make use of 40, 80 and 132-column screen modes as desired.

Deltabase is inexpensive considering its capabilities and Minerva may be wondering why it has priced it so low.





ST Update

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CONTENTS

The message, as a result of the PCW Show, is clear; the industry is out of the eight-bit rut and firmly heading into a sixteen/thirty-two bit future. That was proven at the Show by the massive interest shown in the ST, and to a lesser extent machines like the Amiga and the expensive Acorn Archimedes.

In the Show Report in this issue, you'll see that every field of ST development is progressing in leaps and bounds; serious software is becoming more sophisticated; games such as Novagen's *Backlash* are at last making full use of the ST's abilities; and third-party hardware products such as video digitisers, sound samplers, comms units, laser printers and hard disk drives are increasing the ST's abilities to the point where it becomes not so much a computer, more the central point of a complete information handling, entertainment and productivity system – which is what home computers were always claimed to be. The home computer business got off to a false start, with disillusionment with eight-bit machines setting in fairly quickly. It soon became clear that while the potential was there, the first affordable machines simply didn't have the speed, power and capacity to do much more than act as an introduction to the basic concepts of computing.

There are many possibilities for the future; transputer technology giving unheard-of processing power in smaller and smaller packages; reduced instruction set computing (RISC) offering enormous improvements in speed; and many new forms of data storage, including compact disk read-only memory (CD-ROM), write once, read many storage (WORM), and even multiple read-write compact disk storage, for which I don't think a pronouncable acronym has been coined yet!

NEWS

Atari profits up

Atari has made a phenomenal financial recovery with its worldwide sales of the ST range.

Latest half year sales show a 132 percent profit increase on last year's figures, at $28,795, 000 (£17,531,202).
This figure is the net income Atari has made from the beginning of this year to 4th July. The figures for the same period last year are $12,400,000 (£7,549, 467).

The demand for the ST has reached global proportions. The computer trade press carried reports that chief financial officer Greg Pratt was admitting shortages in every Atari subsidiary. Pratt was also reported as saying, "Boy, I wish someone told me demand was going to be this high back in May."

This must only confirm managing director of Atari U.K. Bob Gleadow's hopes of sales in the U.K. exceeding 100,000 this Christmas, developing the ST into a mass market machine.

Should this happen, Gleadow could put in an interesting bargaining position within Atari worldwide, as the company has yet to tame the U.S. market and faces stiff competition in Germany.

Atari claims profits will not further reduce the price of the ST which is already considered as a relatively cheap machine, but the company will offer more power to existing machines in terms of upgrades and peripherals (see story below). Plans also include acquiring a semi-conductor plant to exploit the power of parallel processing leading the company into the 1990s.

Mirrorsoft loses out on a bundle

The on-off Atari desktop publishing bundle finally seems to be on. It should be out this month. Atari had intitially planned to put out a system based on the ST laser printer and Mirrorsoft's ***Fleet Street Publisher,*** but Mirrorsoft judged Atari's offer to be unreasonably low.

The new candidate is ***Publishing Partner,*** a US originated package which Atari is busily turning into a proper Gem-based package. Atari UK's technical director Les Player insists that it will come out in spite of this.

Gleadow plays it cool

Atari UK managing director Bob Gleadow has been spending considerable time recently emptying buckets of water over anyone getting excited about transputers or CD ROMs, but it's understandable. Gleadow's job involves filling the UK market with Atari STs – PCs, transputers and CD ROMs are the sort of things which have been fuzzing up the Atari picture ever since Tramie took over and at the moment Gleadow wants to make it quite clear that they are very much a subsidiary part of the main picture.



Gleadow has already flexed his muscles to an extent over the transputer, which is likely to be the key to the next generation of Atari machines. The transputer project is thought to have commenced thanks to Gleadow's influence, and will provide at least parallel development to American Atari enhancement work on the ST, which will move through the Motorola 68030 upwards. The latter will maintain ST compatibility in the transputer box.

Sure you're likely to be able to connect the two, but the ST is likely to find itself downgraded to sort of super I/O connector, controlling peripherals for the zipper machine. Interestingly enough, it already does this for a less zippy machine. Atari's cheap laser printer is a dedicated ST printer but if you shove the ST between a PC and a laser you can drive the latter from the PC.

And the CD ROM? This is a US initiative out this Christmas for £399 and aimed, says Gleadow, at the database marketplace. What he means by this is that he can flog it to people like BT to put phone books, circuit diagrams, parts directories and the like on a compact disk. As you can read from CD ROM and not write to it he's probably right at the moment. In the 600 megabytes of storage space you can put lots of useful things like encyclopaediae and something else, just as soon as some-body thinks of it. Gleadows' personal tip for the top is massive games. The Atari CD does however have another use: it can be pluged up to your hi-fi to play music. This factor might create a market for it.

Atari war offensive

Players of computer wargames could sometimes be forgiven for thinking that the publishers were trying to prove that they could do it better blindfold. The programing tends to be primitive and the pre-sales testing nothing short of deplorable (any manufacturer thinking of complaining should bear in mind we have a lot of supporting evidence we haven't used yet).

Atari intends to change all that. The company is currently testing a 3-0 perspective battle system designed to allow you to re-fight engagements from the general's viewpoint. We think that means that if you send in the Guard at Waterloo you see the ranks plod off towards distant hills. More when we've seen the system.

First release is intended to be the battle of Borodino, but the intention is to allow an infinite series of battles to be plugged into the system.

Comdex 286PC launch?

Atari was due to launch its 80286 PC previously thought to be dead, at the Las Vegas Comdex in November. The machine's appearance doesn't change the launch schedule, which should see an 80386 machine for next spring's Hanover fair alongside a Unix add-on for the Atari ST.

Calligrapher

The Document Processor

This completely new word processor has been written specifically for the Atari ST, running under GEM, and contains many features only previously found on desk top publishing programs. However, Calligrapher goes further than any of these by providing an incredibly comprehensive range of word processing facilities.

Calligrapher is a pure WYSIWYG document processor. It shows on screen the document exactly as it will appear on the paper, including different font styles, graphics, page breaks, headers, footers etc. It supports multiple column text which is automatically re-formatted after every change. This means there is no 'format' key to press and ensures the screen is always up-to-date. Up to ten documents can be held in memory at once, each with their own window.

• Multi-column text. The layout of text is controlled by rulers. There can be any number of rulers at any point in the document and these control the margins, tab settings (both normal and decimal), the number of columns below the ruler etc. And because the text is automatically re-formatted, any change to the ruler, for instance dragging the margin indicators, will instantly be reflected in the text.

▼

Package includes

Professionally written 210 page manual,

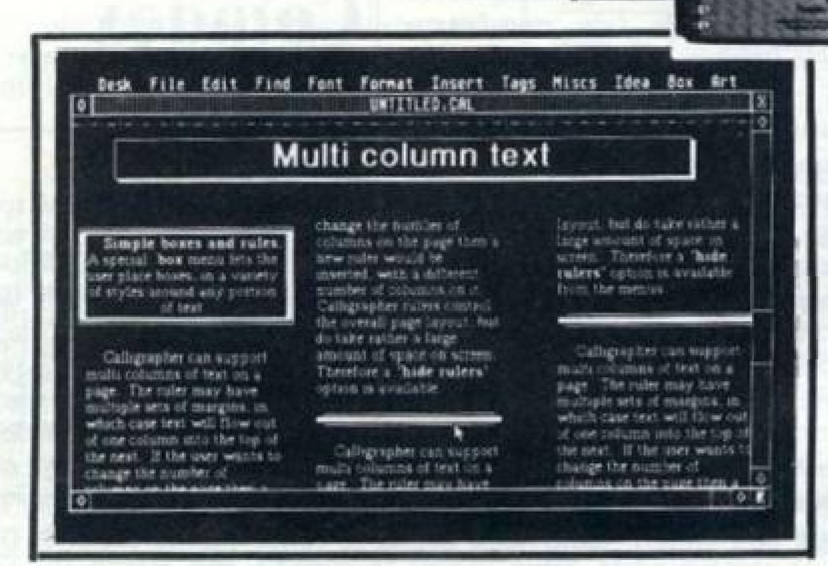
4 Discs

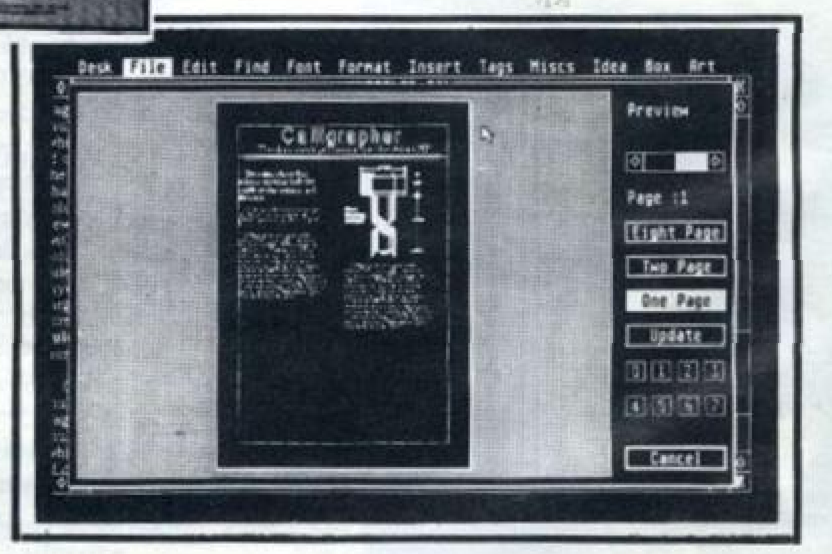
+ a quick reference card and installation instructions.

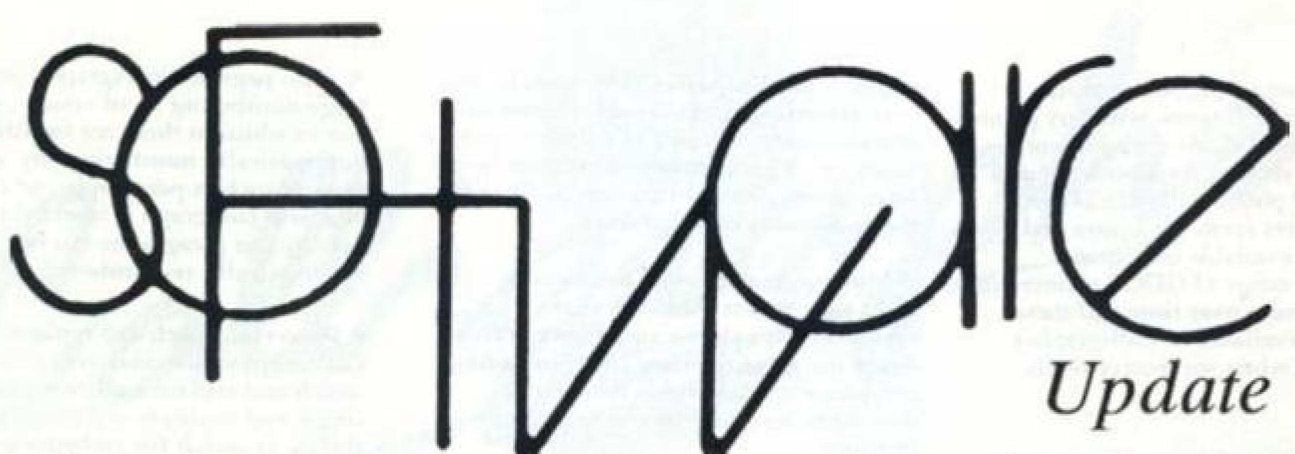
• Multiple on-screen fonts. Two styles are supplied in the package (SWISS and TIMES) which can be printed in a variety of sizes. In addition, Calligrapher supports a variety of text effects such as bold, underline, sub and superscript, italic, outline and strikeout.

• Any portion of the document may be marked (including rulers, graphics and text), just by clicking the pointer at the start of the region and dragging. Once marked this region may be copied to the clipboard—and from there pasted in to any other part of the document. The text style and size may be easily changed from a menu option.

▼







Update

Barbarian

Palace's bloodthirsty slash'n'hack title ***Barbarian*** – not to be confused with Psygnosis' more strategic game of the same name – is at last out on the ST, and certainly lives up to its reputation.

For those of you who aren't aware of this head-to-head combat classic, it was a number one hit on the Amstrad CPC/CBM64/Spectrum, and should do equally well on the ST.

Like many other martial arts games, Barbarian is a one-or-two-player game featuring two warriors battling to the death. Unlike the others, which are largely based on the almost gentlemanly Oriental conventions of Karate, Kung-Fu or Kendo, Barbarian is a bloody swordfight in which you must hack, butt and kick your opponents into a bloody pulp.

Against a series of nicely-detailed backgrounds – forest clearing, volcanic wasteland, fighting pit – you battle increasingly fierce opponents in order to rescue the beautiful princess from the evil wizard. Using the joystick you can select any of sixteen offensive or defensive moves, including straightforward cuts, kicks, headbutts, the whirling Web of Death and the fiercesome Decapitator, which if timed properly results in your opponent's head leaving his shoulders in a fountain of gore (great!).

Each fighter starts with twelve points, which are lost at every cut or blow which lands. The sound effects sound like they've been sampled from a Conan film, with grunts of pain, the clang of sword on sword and the thud of severed heads adding an immense amount to the gameplay. You can choose continuous music if your stomach can't take it. There's a score tally and a high-score table, but basically the idea is to defeat twelve warriors then the evil wizard (who shoots bolts of magic at you), so the scores are to an extent irrelevant.

The animation is fast, although the sprites could perhaps do with a few more frames to make the appearance smoother. On the subject of the sprites, they appear to be merely "smoothed" versions of the eight-bit sprites rather than redrawn images – a pity, since this means they aren't as good as, for instance, those in Psygnosis' game of the same name.

However, the fighting action is excellent, and little details like the coup de grace, the mutie which drags off the bodies, and the final appearance of the princess once you have defeated the wizard are great.

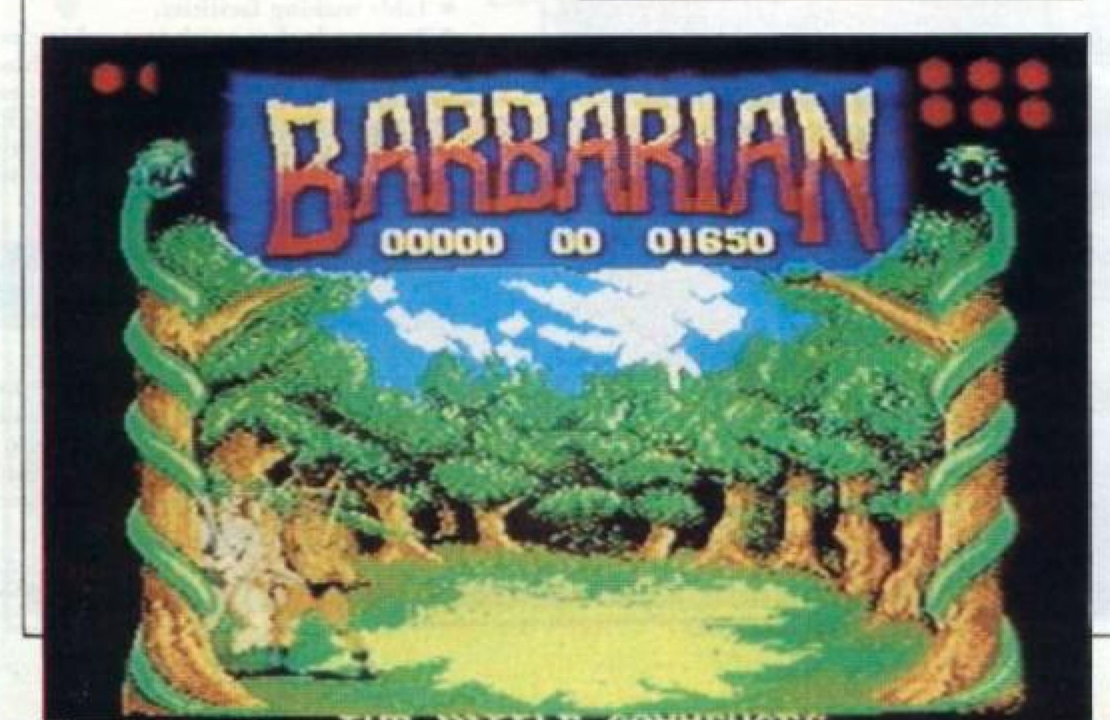
Featuring the famous frontage of Maria Whittaker on the package, Barbarian is a "must have" if you enjoy this style of combat game, through as with everything else in this genre, you probably wouldn't dig it out too often after you've completed it once.

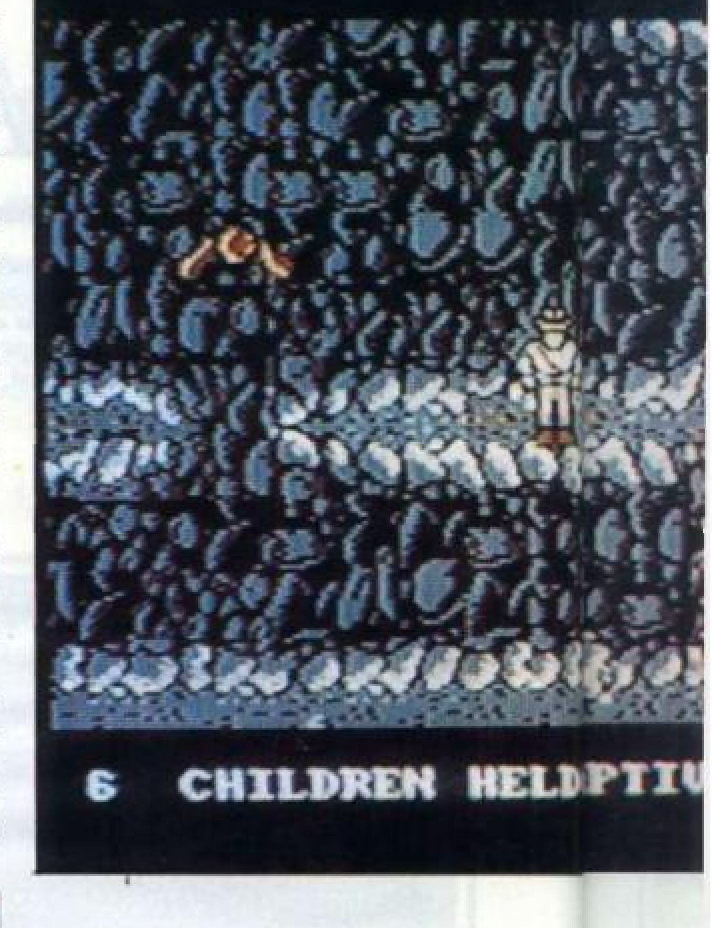
PROGRAM:	**Barbarian**
PRICE:	**£14.95**
SUPPLIER:	**Palace Software**

UPDATE RATING

GRAPHICS:	**20**
SONICS:	**22**
GAMEPLAY:	**20**
V.F.M.:	**20**







Indiana Jones

I would say that this is disappointing, but one never expects too much of arcade conversions which are themselves licensed from films. ***Indiana Jones and the Temple of Doom,*** the motion picture, has plenty of action sequences which would lend themselves well to computer game conversion – but none of them with much spark of originality.

What we've ended up with is a three-stage game, the first part of which is basically a platforms-and-ladders format, The box shots of the coin-op show finely-detailed backgrounds and large animated figures; the reality on the ST is dull backgrounds and small, averagely-animated sprites.

The first level takes place in a complex of mine-workings, where Indiana must free captured children while avoiding or whipping bats, thuggee guards, and the fireballs of the evil Mola Ram. There are three difficulty levels, which you select according to the entrance which you choose. After that it's shuffle shuffle shuffle, whip whip whip, fall over, climb a ladder, swing across a chasm, find a captured child, break open the cage,

Backlash

It says a lot about ***Backlash*** that punters were quite happy to pay £19.95 just for a preview version at the PCW show. Once this game is finished, I have no doubt that it will become the most impressive shoot-'em-up yet seen on the ST. While some companies continue to churn out endless vertically-scrolling arcade games, thankfully innovators such as Novagen make better use of the ST's abilities. Backlash is by Paul Woakes, author of ***Encounter*** and the innovative 3-D wireframe arcade adventure ***Mercenary.***

Backlash is very much like the arcade tank game ***Battlezone,*** in that it consists of a 3-D out-of-cockpit view of an alien landscape, where your only aim is to blast enemy ships before they blast you. The scrolling is incredibly fast and smooth, the solid alien ships move like greased lightning, and the streams of energy bolts and ships fill the screen with no noticeable diminution in the speed of the game.

The sound effects are excellent, especially the explosions, which are pure sound chip rather than samples.

Joystick control of your ship allows you to move freely in all eight directions, and your head-up radar display shows you alien ships as white dots, and incoming missiles as red onces. The radar doubles as your gunsight, which can be confusing when the screen is filled with explosions!

As with ***Battlezone,*** you must keep moving if you hope to survive; ships and missiles close in on you inexorably. As you progress through wave after wave, the alien ships become faster and more vicious, flying over your head and unleashing streams of missiles which must be dodged or avoided.

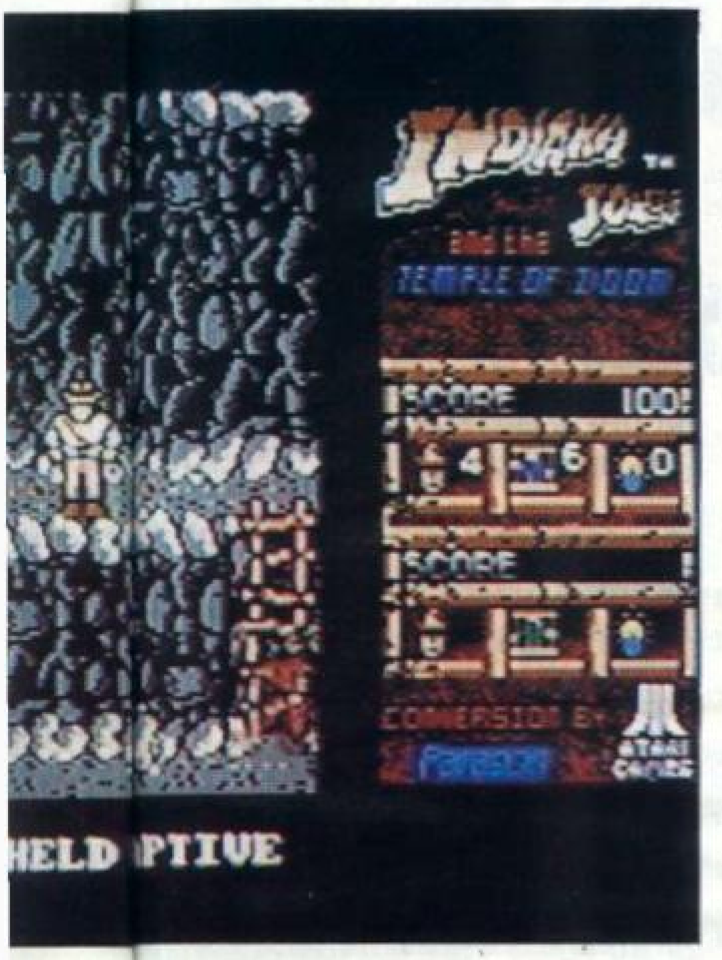
The detail in the game is wonderful to behold; each saucer has its shadow chasing it across the desert; missiles bounce along the ground towards you; and when shot, objects explode into a shower of polygons. If you lose a life, the screen disintegrates in a polychromatic display.

While there's plenty missing from the preview copy – more ground features and aliens have yet to be added – it's clear that ***Backlash*** is the natural successor to ***Starglider*** in the "bloody hell! I must have that!" stakes.

By the time you read this, the finished version should be available; lose no time in buying it.



PROGRAM:	Backlash
PRICE:	£19.95
SUPPLIER:	Novagen
UPDATE RATING	
GRAPHICS:	22
SONICS:	20
GAMEPLAY:	22
V.F.M.:	23
87	



whip a bat, and so on . . . The second level promises to be more interesting. In this Indy pilots an underground railcar, steering it to avoid pitfalls and enemy cars. Again, the whip comes into play to derail the thuggees; unfortunately, this diagonally-scrolling section suffers from poor animation, especially when you hit top speed. The third level is back to the caverns to recover the missing diamonds.

Not a big thrill, I'm afraid, and with no new Indiana Jones films in the offing, I can't see it doing particularly well.

PROGRAM:	Indiana Jones
PRICE:	£19.95
SUPPLIER:	US Gold
UPDATE RATING	
GRAPHICS:	15
SONICS:	12
GAMEPLAY:	15
V.F.M.:	10
52	

Skulldiggery

It's incredible that tat like ***Skulldiggery*** is still appearing on the ST, and even more incredible that a respectable software house like Nexus should handle it – especially since the last Nexus release was the impressive ***Hades Nebula.***

Skulldiggery is nothing more or less than a ***Boulderdash*** clone. This tired formula has been thrashed to death on all the eight-bit machines in the world, and I had hoped that no-one would have the gall to produce a version for the ST.

It seems, though, that there are still some programmers so unimaginative that the ST's abilities don't inspire them to greater acts of creation.

Presented in four-colour medium res or hi-res, ***Skulldiggery*** features ZX81-style graphics showing a "bouncy cave mite", blocks of earth and the odd glistening diamond. Your task is to collect all the diamonds before the timer on each of the 100 levels runs out.

Complications include mazes, tumbling skulls, mite-eating bats and ghosts. There are also sections where all the diamonds are enclosed by impenetrable walls, and you have to drop an object on a bat to cause an explosion and free them.

A two-player option where you can work together or against each other is the only real novelty.

A very tired formula, which hasn't even been well presented. Apart from a nice sampled sound effect of a door opening each time you complete a level.

No real use has been made of the ST's facilities, and at this price Skulldiggery should be avoided.

PROGRAM:	Skulldiggery
PRICE:	£19.95
SUPPLIER:	Nexus
UPDATE RATING	
GRAPHICS:	5
SONICS:	5
GAMEPLAY:	5
V.F.M.:	5
20	





Gnome Ranger

Level Nine's latest adventure title is released under the company's own name, rather than through Rainbird. The style, though, if not the packaging, is identical to the Rainbird titles ***Knight Orc*** and ***Time and Magik.***

This means that instead of the dismal pictures we had come to know and loathe, ***Gnome Ranger*** is decorated with very nice digitised paintings, depicting the wilderness through which Ingrid the Gnome wanders in search of her lost home.

Also like the Rainbird packages, ***Gnome Ranger*** features an advanced parser, with commands such as OOPS to take back a move, RAMsave, and high-level commands such as FOLLOW, WAIT FOR, GO TO and FIND. These high-level commands can bring their own problems, though; in the centaur's shop, type "get all" and the centaur replies "You haven't given me enough yet" – seven times! There's a good deal of character interaction, with several characters needed to solve some of the puzzles. You can also select graphics on/off, or scroll the picture up and down.

Unfortunately Level Nine's sense of humour is an infantile as ever; having every word beginning with "N" spelt with an additional "G" gets very tiresome. Fortunately you don't have to type in "Go Gnorth".

The plot, such as it is, is the usual business of maps, treasures, monsters, magic and mazes. Many fans of the Rainbird adventures will miss the extra gimmicks, though; there's nothing in the package exept a 48-page diary booklet.

Nothing new, then, but a worthwhile addition to the growing range of original ST adventure software.

PROGRAM:	**Gnome Ranger**
PRICE:	**£14.95**
SUPPLIER:	**Level Nine**

UPDATE RATING

GRAPHICS:	**20**	**55**
SONICS:	**—**	
GAMEPLAY:	**15**	
V.F.M.:	**20**	

3-D Galax

Four years ago Artic brought out a Spectrum game called ***Dimension Destructors.*** It featured 3-D wireframe graphics depicting waves of aliens zooming towards your space fighter, and was an excellent blast for its time.

Now, in the spirit of originality and innovation, Gremlin uses exactly the same idea in 3-D Galax.

There's some excellent programming here, largely wasted on a game which has too little plot or variation to hold the attention. ***3-D Galax*** comes out looking like a very good programming demo, but hardly a finished game.

As you'd guess from the name, it's a perspective graphic version of ***Galaxians.*** A ***Starglider***-style control panel gives you a radar scanner showing the altitude and bearing of the waves of enemy ships; all you have to do is get them in your sights and blast them. This is remarkably difficult, since they won't stay still and be blasted, but do tend to home in on you and crash suicidally into your ship.

There are four types of enemy craft, which are presented in colourful solid 3-D graphics. As you eliminate more and more with your missiles, they get faster and faster, until by the end of the wave the only way to eliminate the last ones is to hold your fire until you see the whites of their sensors.

There are 99 waves to destroy, with a wave of asteroids after each fourth wave of ships. The asteroids are more tightly clustered than the ships, so harder to avoid. You have special missiles for use against asteroids, but since these are selected automatically for you, this doesn't add anything to the gameplay. Good music (which can be killed) and passable sound effects add to the polish of the package, but basically there isn't enough gameplay in ***3-D Galax*** to retain anyone's interest.

PROGRAM:	**3-D Galax**
PRICE:	**£19.95**
SUPPLIER:	**Gremlin Graphics**

UPDATE RATING

GRAPHICS:	**15**	**55**
SONICS:	**15**	
GAMEPLAY:	**15**	
V.F.M.:	**10**	

Terrorpods

A vastly complex and intimidating strategy/shooting game, ***Terrorpods*** goes to prove once again that Psygnosis is coming up with packages which make the most of all the ST's abilities.

Featuring the usual excellent graphic designs and packaging by the talented team of Roger Dean and Tim White, ***Terrorpods*** has a gloss and polish which very few games can emulate.

It's a space war simulation in which your task is to defend an industrial planetoid from the evil Empire, whose Mother Ship, Spoilers and Terrorpods are intent on knocking out the mines and factories – and you too if you sit still long enough.

A wealth of graphic displays give you information on your weapons systems, communications, power, location and fuel, your task is to fight off the Terrorpods and defend the installations using missiles, phasers and rebuilding beams. To stay in operation you must trade with the surviving installations, swapping fuel for explosives and so on in order to continue your fight against the baddies.

There are some brain-numbing graphic and sound effects as missiles and energy beams fly, Terrorpods skip across the landscape and installations explode in great gouts of flame.

The landscapes scroll fairly well, and a series of pull-down windows allow you access to the trading and communications sections of the game. A land-going Drover can be sent out to contact installations and exchange commodities; obviously you must defend this vehicle against the Terrorpods and missiles.

Shields, map displays, Starglider-style missile launching routines and complex mapping requirements make Terrorpods a huge challenge – my only real objection is that with over sixteen control keys to learn, you can find yourself blown to pieces as you try to remember which key does what.

Though you can use a fuel-gobbling warp drive to skip from one complex to another, Terrorpods is likely to be a long time playing; the ultimate aid is to collect bits of Terrorpod and get the secret back to base. Forunately there's a game save function, so you can think of it in some terms as an arcade-strategy-simulation-adventure, and a damn good one too. Buy at once.

PROGRAM:	**Terrorpods**
PRICE:	**£24.95**
SUPPLIER:	**Psygnosis**

UPDATE RATING

GRAPHICS:	**20**	**80**
SONICS:	**20**	
GAMEPLAY:	**20**	
V.F.M.:	**20**	

GEM Programming

Ken Garroch continues his series

So far, this series has covered the window and event facilities provided by GEM AES. This month I'll look at another very important aspect of GEM-WIMP programming – objects.

An object is a predefined item and can be any one of the following; (the numbers are used to define the particular type);

20 Graphic box – an empty or shaded box with border.
21 Graphic text – a string of characters that can be editied.
22 Boxed text – a graphics box with text in it.
23 Image – a bit image of any size that can be placed anywhere on the screen.
25 Invisible graphic box – a graphic box with no internal colour or fill pattern.
26 Button – a graphic text object with the text centre.
27 Boxchar – a graphics box with a single character in it.
28 String – a string of characters, not directly editable.
29 Ftext – Formatted graphic text that uses a template.
30 Fboxtext – as above but with a box.
31 Icon – an image with special attributes.
32 Title – similar to a graphics text string but used for menus.

Each object definition fits into a structure as follows:
Next-word – index number of a brother or sister object.
Head-word – index number of the first child in the ist of the objects children.
Tail-word – index number of the last child of the objects children.
Type-word – the object's type number (see types above)
Flas-word – various attributes pertaining to what the object can do.
State-word – defines the object's state.
Spec-long – usually a pointer to additional data needed for the definition, but not always (see later).
X-word – the x coordinate of the object relative to the last, if the object is the first or parent then this is in absolute screen coordinates.
Y-word – the y coordinate of the object, again relative to a parent.
Width-word – the object's width (in pixels).
Height-word – word – the height of the object.

This gives each object an area of 12 words, and each structure is placed one after the other in an array.

The clever thing about objects is that they can be grouped together and then drawn in one go. Objects are grouped together with pointers and can be looked at as extended families with a parent, which can have a number of children, and the children which can also have children etc. The easiest way to understand this is to take a simple example. To get the picture shown in fig 1, the following objects are needed: a graphics box, two graphics text boxes, an image, and an invisible box. The structures for these are placed one after the other in memory; the order is not important, just the way they are linked. An important point is to note that each object must be larger in area than its children, i.e. they have to be enclosed by it. Grouping these so that the parent is the graphics box, its children are the graphics text boxes, and their children will be an image and an invisible box. Each object in the sequence has an index number with parent being zero and the invisible box being four.

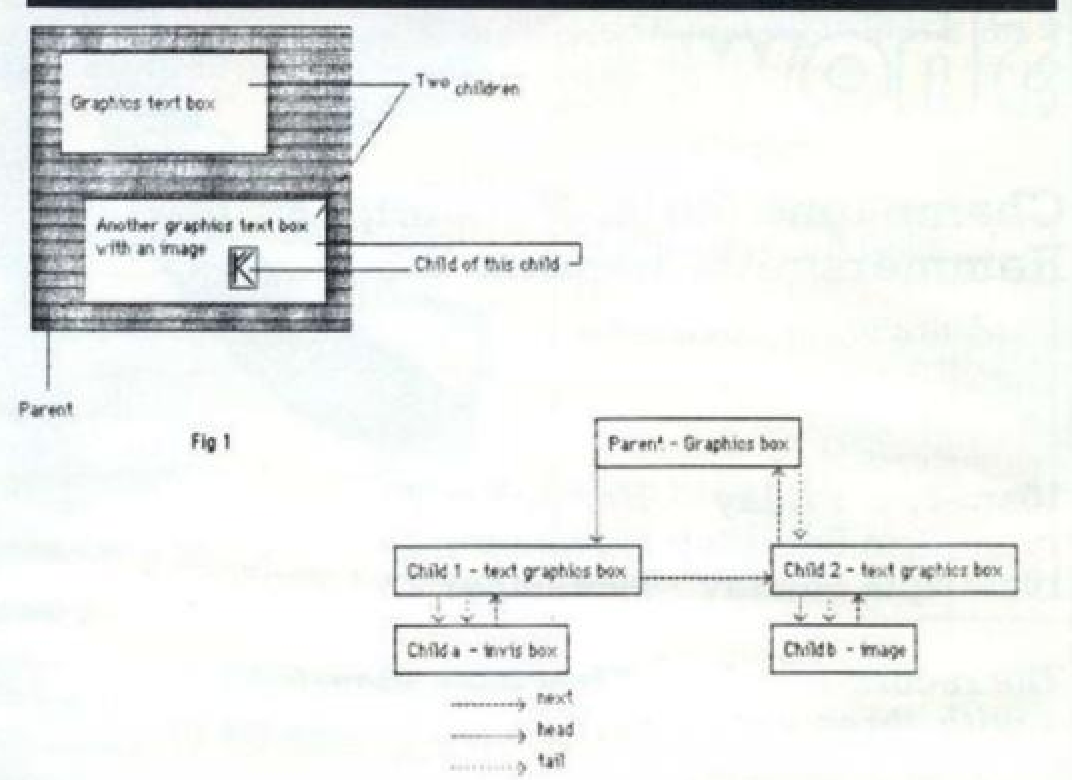


Fig 1

Fig 2

The **next** of parent is zero since it is at the head or root of the object tree. The **head** is object 1 (child 1) and the **tail** is object 2 (child 2). Child 1 has child 2 as its **next** since this is to be drawn at the same time, its **head** will be object 4 as is its tail. Child 2's **next** is 0 i.e. point back to the parent, its **head** and **tail** are 3 i.e. the imge (see fig 2 for a more graphical representation).

To manipulate and draw objects, there is a section of the AES known as the Object Library. There are a number of routines which I will cover in the coming months. Perhaps the most important is Object draw – draw the objects in the three up to the specified depth.

dobdrw		dc.w 42, 6, 1, 1 (see last month for details)
intin	"	index of start object, normally parent.
intin+2	"	draw to this depth (see example)
intin+4	"	x coord of clipping rectangle
intin+6	"	y coord of clip rectangle
intin+8	"	width of clip rectangle
intin"10	"	height of clip rectangle
addrin	"	address of tree

Nothing will be drawn outside the clipping rectangle since it clips the object to a set size.

Last month I developed an easy method of accessing the AES routines i.e. set up the arrays, load the address of the code header, and call the AES routine. To save space I'll not bother printing whole programs, just the routines being used. This does mean that if you aren't a loyal reader of ST Update then you'll have to order some back issues.

The example program shown in fig 3 defines the objects described above, and then displays them starting at depth zero (the display is not identical to the picture since x/y positions are a little different). There are a few additional data structures, a little experimentation with the program will show what is possible.

```
imaged   dc.w   $1111111111111111
         dc.w   $1000000000000001
         dc.w   $1011000011001101
         dc.w   $1011000110011001
         dc.w   $1011001100110001
         dc.w   $1011011001100001
         dc.w   $1011110011000001
         dc.w   $1011100110000001
         dc.w   $1011001100000001
         dc.w   $1011011000000001
         dc.w   $1011111100000001
         dc.w   $1011100110000001
         dc.w   $1011000011000001
         dc.w   $1011000001100001
         dc.w   $1011000000110001
         dc.w   $1011000000011001
         dc.w   $1011000000001101
         dc.w   $1000000000000001
         dc.w   $1111111111111111
; Above is a simple bit image two bytes wide and 19 lines high

tex1     dc.l   text1,textt1,textv1        Tedinfo structure 1st 3 are addresses
         dc.w   3,0,2,$11F0,0,1,17,0
; data is font (try 5), reserved 0, justification 0 left 1 right 2 centred
; colour as before, reserved 0, border thickness, string len, template len

text1    dc.b   'Graphics text box',0      Raw text
         even
textt1   dc.b   0                          Template (used when editing)
         even
textv1   dc.b   0                          Verification as bove
         even

tex2     dc.l   text2,textt2,textv2
         dc.w   3,0,2,$11F0,0,1,28,0

text2    dc.b   'Graphics text box with image',0
         even
textt2   dc.b   0
         even
textv2   dc.b   0

dobdrw   42,6,1,1                          Object draw code
```

Fig 3

```
Main routine at GO (see last month) is:
GO       bsr    iniaes                     Initialise AES
         bsr    appin                      Initialise the application
         bsr    obdraw                     Draw to depth 0
         bsr    ekbd                       Wait for a keypress
         addq   #1,depth                   Increase depth
         bsr    obdraw                     Draw to depth 1
         bsr    ekbd                       Wait for a key again
         addq   #1,depth
         bsr    obdraw
         bsr    ekbd
         bsr    appex
         rts

depth    dc.w   0                          Depth to draw obs to

obdraw   move   #0,intin                   Start at object 0
         move   depth,intin+2              Draw to depth
         move   #1,intin+4                 X coord of clip rect
         move   #1,intin+6                 Y coord of same
         move   #639,intin+8               Full screen width
         move   #399,intin+10              And height (reduce for colour)
         move.l #parent,addrin             Address of tree
         lea.l  dobdrw,a0                  Address of code to draw in a0
         bsr    aes                        DoIt
         rts                               Ignore any errors

parent   dc.w   0,1,2,20,0,0,1,$1191,10,20,319,230
; data is next,head,tail,type,flags,state,bord width,colours,x,y,width,height
; note that obspec is split into two words, the colour and the border width instead of a pointer
; colour word is 4 bits border colour, 4 bits text colour, 1 bit text mode, 3 bits fill type, 4 bits
; inside colour giving 16 bits in all. Colours range from 0-15
child1   dc.w   2,4,4,22,0,0               Type is 22 and is as above but
         dc.l   tex1                       This now points to tedinfo structure tex1
         dc.w   10,10,200,100
child2   dc.w   0,3,3,22,0,0               Almost identical to child1
         dc.l   tex2
         dc.w   10,120,300,100
childb   dc.w   2,0,0,23,0,0               23 is image
         dc.l   image                      Pointer to bitblk structure
         dc.w   50,10,16,19
childa   dc.w   1,0,0,25,0,0,0,$1191,0,0,0,0


image    dc.l   imaged                     Bitblk struc 1st is address of image data
         dc.w   2,19,0,0,$01f1,0
; data is width in bytes, depth in scan lines, source x fset, source y fset, colour, null
```



Programming

Using the ADCDAC

If you assembled the ADCDAC with us last month, you will probably be wondering how to use a program to control it. Since it connects to the printer port, the control lines available from the Programmable Sound Generator (PSG) are used to tell the ADC to convert (Strobe – bit 5 port A) and to read the converted data back through port B. The operation is quite simple: the strobe is set low, so setting the RD line on the ADC chip low and starting the conversion. A short delay is needed while the ADC performs the conversion, and then the result is read in through port B. The strobe line is then sent high to allow the ADC to reset itself before the next conversion takes place.

The delay between the start of and the reading of the conversion is quite short, about the time taken up by three instructions. This gives a very high sampling rate of about 40-50 thousand samples a second or 40-50kHz, more than enough for sound sampling.

The sound can either be played back through the DAC or the sound chip. The sample can be sent through the DAC by setting the strobe high and port B to output. A delay between each sample sets the playback speed and hence the frequency. The sound chip is a little more complex in that the amplitude of the sample has to be reduced to give values from 0 to 15 instead of the 0-255 used for the DAC. This reduces the quality somewhat but the result is reasonably intelligible.

The method used with the sound chip is amplitude modulation. A channel is set to its highest frequency of about 125kHz which is above the human hearing range. The modified sample is then used to alter the volume of the channel to give the output. There is quite a bit of distortion since changing the volume value from 0-15 does not give a straight volume change – the step from 1-2 does not change the volume by the same amount as the step from 14-15. A little processing of the sample could overcome this.

The accompanying program allows samples to be taken at various speeds and then to be played back either through the DAC or the PSG. Graphical output is available on the screen and the sample can be compressed to show its entirety or expanded to view sections. The control keys are as follows:

1 Reduce the delay to speed up sample and playback
2 Increase the delay to slow down the sample and playback
3 Play the sound through the DAC
4 Start the sampling and store the sound in a buffer
5 Play the sound through the PSG
6 Draw a graphical representation of the sound
↑ Move the graphical display left (towards the start)
↓ Move the display right
← Expand the display
→ Compress the display
Return Exit the program.

The length of the sample can be increased either by slowing down the sampling rate or increasing the value assigned. The maximum length depends on the amount of memory available.

Once the program is running, the ADCDAC can be set up in the following way.



Connect the input to the source, either a high impedence microphone or the output of a hi-fi amp. Connect the output either to a pair of headphones or the amplifier input. Make sure that everything is connected properly and turn the power on. Turn VR2 fully anti-clockwise and VR1 to its centre position. Without allowing any sound into the input, press 4 to take a sample.

Press 6 to display the program and then press the ◄ key to compress the display until a vertical line appears on the right hand side of the screen. A horizontal line should appear somewhere on it.

Now inject some sound and press 4 and 6 to sample and display it. At the extreme left of the screen you will see the initial sample level. The sample should modulate up and down, if it does not, adjust VR1 until it does. Now adjust VR2 until the maximum value of the sound is just below the top of the screen, all the time adjusting VR1 to keep it centred. Once you see the sample with no bits chopped off the top or bottom, press 5 to hear the sample from the PSG and then 3 for the DAC output. The latter should sound identical in quality to the input sound. You may have to press key 2 a couple of times to get the pitch right but the system should then be installed.

```
START   MOVE.L   A7,A5              Header
        MOVE.L   #USTK,A7
        MOVE.L   4(A5),A5
        MOVE.L   $C(A5),D0
        ADD.L    $14(A5),D0
        ADD.L    $1C(A5),D0
        ADD.L    #$100,D0
        MOVE.L   D0,-(SP)
        MOVE.L   A5,-(SP)
        MOVE.W   D0,-(SP)
        MOVE.W   #$4A,-(SP)
        TRAP     #1
        ADD.L    #12,SP
        BSR      GO                 Jump to main program as subroutine
        MOVE.L   #0,-(SP)
        TRAP     #1

sound   dc.l     1                  Holds address of sound buffer
compand dc.l     1                  Draw compress expand amount
fset    dc.l     0                  Draw offset from start
aline   dc.l     1                  Aline base address
cnt     dc.w     40                 Max timer count
psg     equ      $FF8800            Start of PSG chip
slen    equ      18000              Length of sample in bytes

GO      bsr      setline            Set up Aline
        bsr      super              Whole prog in super mode
        bsr      noclick            Turn off the keyclick
        bsr      zechip             Reset the mixer in the psg
        bsr      decurs             Turn off the cursor
        bsr      malloc             Allocate space for sample

monit   bsr      rkey               Read keyboard on fly, start of main loop

        swap     d0                 Get high word
        cmp.b    #2,d0              Check for key 1
        bne      monit1
        bsr      dmin               Key 1 - speed up sample and playback
monit1  cmp.b    #3,d0              Check for key 2
        bne      monit2
        bsr      dplu               Key 2 - slow down sample and playback
monit2  cmp.b    #4,d0              Check for key 3
        bne      monit3
        bsr      playex             Play current sample externally
monit3  cmp.b    #$1c,d0            Check for key Return
        bne      monit4
        bra      monita             Key Return - end program
monit4  cmp.b    #5,d0              Check for key 4
        bne      monit5
        bsr      sample             Key 4 - take a sample

monit5  cmp.b    #6,d0              Check for key 5
        bne      monit6
        bsr      play               Key 5 - play sound internally
monit6  cmp.b    #7,d0              Check for key 6
        bne      monit7
        bsr      draw               Draw waveform
monit7  cmp.b    #$4D,d0            Check for key Right Arrow
        bne      monit8
        bsr      shftr              Key RA - shift drawn waveform to the left
monit8  cmp.b    #$4B,d0            Check for key Left Arrow
        bne      monit9
        bsr      shftl              Key LA - shift drawn waveform to right
monit9  cmp.b    #$50,d0            Check for key Down Arrow
        bne      monit10
        bsr      compr              Key DA - compress drawn waveform
monit10 cmp.b    #$48,d0            Check for key Up Arrow
        bne      monit
        bsr      expan              Key UA - expand drawn waveform
        bra      monit              Continue monitoring
monita  bsr      usuper             Back to user mode
        rts                         End program

expan   subq.l   #1,compand         Expand waveform
        bmi      expan0             Max expan is 1
        bsr      draw               Draw waveform
        rts
expan0  move.l   #1,compand         Set max expansion
        bsr      draw               Draw waveform
        rts

compr   addq.l   #1,compand         Compress waveform
        cmp.l    #slen,compand      Max compression
        bpl      compr0             Is the length of sample
        bsr      draw               Draw it
        rts
compr0  move.l   #slen,compand      Set max
        bsr      draw               Draw it
        rts

shftl   sub.l    #20,fset           Move start draw pos left 20 pix
        bmi      shftl0             Check for start
        bsr      draw               Draw it
        rts
shftl0  move.l   #0,fset            Set start
        bsr      draw
        rts

shftr   add.l    #20,fset           Move start draw pos right 20 pix
        cmp.l    #slen,fset         Check for end
        bpl      shftrm
        bsr      draw
        rts
shftrm  move.l   #slen-640,fset     Set end for hi-res slen-320 lo-res
        bsr      draw
        rts

noclick and.b    #254,$484          Turn off keyclick
        rts

zechip  lea.l    psg,a0             Address of PSG
        move.b   #7,(a0)            Select mixer
        move.b   #255,2(a0)         Turn everything off
        rts

dmin    sub      #1,cnt             Reduce delay
        beq      set1               Min is 1
        bsr      disp               Display in binary
        rts
set1    move     #1,cnt             Set min count
        bsr      disp
        rts
dplu    add      #1,cnt             Increase delay
        bsr      disp               Display it
        rts                         Don't worry about max

draw    move.l   #0,d0              Draw waveform
        move.l   sound,a3           Address of sound buffer
        add.l    fset,a3            Plus offset
        move     #27,d0             Clear screen
        bsr      print
        move     #'E',d0
        bsr      print
        move     #0,d6              Counter setup
        move     #0,d0              First x pos start
        move     #128,d1            First y pos start
        move     #0,d2              First x pos end
        move     #0,d3              First y pos end
drawl   move.b   (a3),d3            Get byte to first y pos end
        add.l    compand,a3         Increment pointer using compand
        and.l    #$FF,d3            Single out low byte
        bsr      line               Draw line between points
        move     d3,d1              Make end point into first point
        move     d2,d0              For both x and y
        addq     #1,d2              Next end x
        addq     #1,d6              Increment counter
        cmp      #639,d6            Hi-res screen width (320 lo-res)
        bne      drawl              Loop until done
        rts                         DONE!

playex  bsr      strobs             Play sound externally set strobe 1
        move.l   #psg,a0            Address of PSG
        move.l   sound,a3           Address of sample
        move.b   #7,(a0)            Select mixer in PSG
        move.b   (a0),d0            Read it
        or.b     #128,d0            Set port B to output
        move.b   d0,2(a0)           And set up mixer
        move.b   #15,(a0)           Select port B in PSG
        move.l   #slen,d2           Get sample length to counter
playd   move.b   (a3)+,d0           Get byte of sample
        move.b   #15,(a0)           Select port B of PSG
        move.b   d0,2(a0)           Output sample segment
        move     cnt,d6             Get delay count
playew  subq     #1,d6              And perform delay
        bne      playew
        subq.l   #1,d2              Count down until whole sample out
        bne      playd
        bsr      porti              Set port B back to input
        rts                         Sound finito

play    move.l   #psg,a0            Get address of PSG
        move.b   #2,(a0)            Select chan B freq low
        move.b   #0,2(a0)           Highest possible freq on this
        move.b   #3,(a0)            Select chan B freq high
        move.b   #0,2(a0)           Set up carrier frequency
        move.b   #7,(a0)            Mixer
        move.b   (a0),d0            Read
        and.b    #253,d0            Chan B on
        move.b   d0,2(a0)           Write
        move.l   sound,a3           Start of sound
        move.l   #slen,d0           Length of sample
        move.b   #10,(a0)           Set vol C
        move.b   #0,2(a0)           To zero
        move.b   #8,(a0)            And set vol A
        move.b   #0,2(a0)           To zero
        move.b   #9,(a0)            Select vol reg for chan B
        move.b   #7,2(a0)           Middle vol
playl   move.b   (a3)+,d1           Get sound sample
unsgn   lsr.b    #4,d1              Divide by 16 to compress it
        move.b   #9,(a0)            Select vol B
        move.b   d1,2(a0)           Set level
        move     cnt,d6             Get delay count
playe   subq     #1,d6              Dec to
        bne      playe              Zero
        subq.l   #1,d0              Dec counter
        bne      playl              For whole sample
        rts                         End of output

disp    move     #27,d0             Display number in binary
        bsr      print              Home cursor
        move     #'H',d0            Esc H
        bsr      print
        move     cnt,d5             Value in cnt
        move     #16,d3             16 bit number
dispb   asr      #1,d5              Get bit to carry
        bcs      disp1              If one the print 1
        move     #48,d0             Else print 0
        bsr      print
dispc   subq.b   #1,d3              Count those bits
        bne      dispb              Until all 16 done
        rts
disp1   move     #49,d0             Print a
        bsr      print              One
        bra      dispc

strobs  move.l   #psg,a0            Set strobe to 1
        move.b   #14,(a0)           Select port a
        move.b   (a0),d0            Read it
        or.b     #32,d0             Set bit 5
        move.b   d0,2(a0)           Write it back
        rts

strobr  move.l   #psg,a0            Set strobe to 0
        move.b   #14,(a0)           Select port a
        move.b   (a0),d0            Read it
        and.b    #223,d0            Reset bit 5
        move.b   d0,2(a0)           Write it back
        rts

porti   move.l   #psg,a0            Port B in
        move.b   #7,(a0)
        move.b   (a0),d0
        and.b    #127,d0            Bit 7=0 for in
        move.b   d0,2(a0)
        rts

sample  move.l   sound,a3           Get sample and start of buffer
        bsr      porti              Port in
        move.l   #psg,a0            Address of PSG
        move.l   #slen,d5           Sample length
convl   move.b   #14,(a0)           Port A select
        move.b   (a0),d0            Get value
        and.b    #223,d0            reset bit 5 for strobe low
        move.b   d0,2(a0)           Write it back to end conversion
        move.b   #15,(a0)           Select port b data is valid
        move.b   (a0),d1            So read it
        move     cnt,d6             Delay (not alw neccesary)
convw   subq     #1,d6              Wait
        bne      convw
        move.b   d1,(a3)+           Store sample byte in buffer
        move.b   #14,(a0)           Select port a
        or.b     #32,d0             Set bit 5 to start next conversion
        move.b   d0,2(a0)           Write it back GO!!
        subq.l   #1,d5              Count number of samples
        bne      convl              Until all done
        rts

malloc  move.l   #slen,-(sp)        Allocate slen bytes of memory
        move     #$48,-(sp)         Malloc code
        trap     #1                 Do it
        addq.l   #6,sp              Correct stack
        move.l   d0,sound           Store address in sound
        rts

setline DC.W     $A000              A line set up
        move.l   a0,aline           Pointer to Aline vars

line    movem.l  d0-d3/a0,-(sp)
        move.l   aline,a0
        move     d0,38(a0)          start x
        move     d2,42(a0)          end x
        move     d1,40(a0)          start y
        move     d3,44(a0)          end y
        move     #$FFFF,24(a0)      fg bit pat plane 0
        move     #$FFFF,26(a0)      fg bit pat plane 1
        move     #$FFFF,28(a0)      Plane 2
        move     #$FFFF,30(a0)      Plane 3
        move     #$FFFF,34(a0)      line bit pat
        move     #0,36(a0)          write mode normal
        move     #-1,32(a0)         lstlin
        dc.w     $a003              Draw line
        movem.l  (sp)+,d0-d3/a0
        rts

rkey    move.l   a0,-(sp)           Standard conin without wait
        move     #$FF,-(sp)
        move     #6,-(sp)
        trap     #1
        addq.l   #4,sp
        move.l   (sp)+,a0
        rts

decurs  move     #20,-(sp)          XBIOS remove cursor routine
        move     #0,-(sp)
        move     #21,-(sp)
        trap     #14
        addq.l   #6,sp
        rts

super   clr.l    -(sp)              Jump to supervisor mode
        move     #$20,-(sp)
        trap     #1
        addq.l   #6,sp
        move.l   d0,stave
        rts
stave   ds.l     1

usuper  move.l   stave,-(sp)        Jump to user mode
        move     #$20,-(sp)
        trap     #1
        addq.l   #6,sp
        rts

print   movem.l  d0-d6,-(sp)        GEMDOS print a character
        move     d0,-(sp)
        move     #2,-(sp)
        trap     #1
        addq.l   #4,sp
        movem.l  (sp)+,d0-d6
        rts

        DS.L     256
USTK    DS.L     1                  User stack of 256 longs
        EVEN

        END
```

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BACK-UP UTILITY FOR ATARI ST

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Basic

Ken Garroch interprets HiSoft Basic.

Languages for the ST seems to be coming out thick and fast, probably because the only one supplied with the ST is *Atari Basic* which, as has been mentioned before, is not particularly good. HiSoft seems to have taken to the ST like the proverbial duck to water and its Basic is one of a number of products for the machine including Modula 2 and Lisp.

HiSoft Basic comes in a ringbound folder which contains the manual and two single-sided disks. It seems a little odd that software manufacturers do not save a little money and produce versions for the double-sided drives by putting the whole package on the disk. Suppose that the most common drives are single-sided, so two disks makes sense.

The Basic has a large variety of commands which include some 'structures – not enough for my liking, and quite non-standard. However, at least the attempt was made, allowing reasonable flexibility of use. Unlike most other Basics, the HiSoft version is not interpreted but is compiled only. This has the advantage that when a program runs, it runs quite quickly and is easily made into a stand-alone application that needs no support files. Simply double click from the desktop and you would not know the difference between a Basic program or any other kind. The disadvantage is that there is no immediate command mode, so if you want to try a quick calculation or command, a program must be written and compiled and then run.

HiSoft Basic adopt the current high level language practice of having no line numbers (pretty redundant things at the best of times). Using labels instead of line numbers is a great improvement. The commands range from the standard Microsoft type to those which are specific to the ST. The only drawback is that the authors have not really kept the command syntax constent standard Microsoft (MS) command such as PSET (X,Y) has brackets that are obligatory. However, the ST specific commands, such as the strangely named LINEF xs,ys,xe,ye has no brackets. I would have liked to see the MS LINE (xs,ys)-(xe,ye),colour,box/fill command implemented instead. This is a rather minor moan but having used a number of different Basics, and Microsoft most often, it is annoying to get compilation errors when they are least expected.

Two disks are supplied; the first holds the compiler and demos plus the standard library, and the second contains a stand-alone compiler for use with alternative editors a profiler program for analysing programs, a converter for C Leader files (presumably HiSoft C), and a bundle of libraries that give easy access to GEM, both VDI and AES, and the (X)BIOS. The Basic LIBRARY command is very useful, especially as there is the facility to create your own libraries. These are precompiled so that including them in a program is quick and easy. The only system functions which are not available are AI INF, a pity but then again, most of these are available as basic commands including a screen. GET function that allows sprite sytle graphics and animation to be implemented.

Either HiSoft Editor or an alternative can be employed. The text editor that acts as a front end to the compiler is fully mouse driven apart from the block commands which use the function keys for the commonly-used start-end-save-copy-delete functions. This is rather a shame since using the mouse for a simple drag-cut-paste-copy system would make things a great deal easier. Since there are no line numbers, writing programs that use similar lines is much quicker if they are typed in once and then copied around the program.

The cursor keys can be used as an alternative to the mouse and, although I prefer the latter, prove to be useful at times.

Programs are compiled from the editor by selecting *compile* from the menu, or with ALT-C. A variety of compiler options are available and these can be set up either from the compile dialog box or placed in comments as part of the program. There are two modes, safety and maximum speed. The latter turns off all the checks – for such things as the break key, arrays, error messages etc. If all checks are on then the program runs a little more slowly. All checks can be turned of at the final compilation allowing the program to run at top speed and the uninterruptable programs can either be compiled to memory while still in the development stage, or to disk, to make a stand-along program (PRG file). Compilation to memory takes about 20 milliseconds per line e.g. a 340 line program compiled in about 10 secs. This does vary quite a lot when using libraries since these may have to be loaded from disk. Compiling to disk takes longer although the only difference is the extra time needed to save the completed program as a disk file. Once the compiler options have been set up, compilation and execution can be done with ALT-X, which would normally run the program from the editor. If the program has been changed then it s automatically re-compiled first.

If you already have a preferred text editor, you can use a version of the compiler called HBASIC TTP, which is a stand-alone compiler that takes the file name as its parameter and compiles as before. In this situation, the options must be set up in the Basic source file.

The manual is detailed and includes a short introduction to Basic programming at the beginning with the remainder covering all of the Basic commands and the library functions. As usual, the only index is the contents page at the front. The appendices covering the GEM libraries give a taste of what can be done but don't go into any detail. In some ways this is fair enough since the ideas and facilities available from the VDIUU (Virtual Device Interface) and AES (Applications Environment Services) are quite complex – instead a bibliography is given which covers what few works there are on the subject.

In general, I liked HiSoft Basic and, although there are a few missing commands that I would have expected to see, pretty well everything else is there. An ON TIMER GOSUB command would have been nice, especially since it is quite common in Basic these days.

A better method of drawing boxes shoould also have been included, as it is either lots of lines the VDI equivalent, or the strange BAR command must be used. Apart from these omissions, the language is easy to use, and rates as a reasonably complete and fast version of Basic.

Price £79.95



This year's Personal Computer World Show offered the usual blend of razzmatazz, serious business and industry politics. The games field was particularly active, with many long-awaited products finally turning up in saleable form, and many more previewed as coin-ops. The business exhibition was packed full of new ideas – most of them for the IBM PC.

However, there was plenty to see on the ST front, both in the games and business fields, as well as in applications such as comms and graphics. Most of the ST products were concentrated in Atari World, which took up around a third of the exhibition's First Floor. On the opening day, Atari's press converence saw the announcement of the CD ROM player, which apparently works as an audio CD player as well. Other notable launches included the Atari Laser printer, ideal for use with packages such as Fleet Street Publisher and Publishing Partner, and an ST-based Fax machine costing much less than a dedicated machine of similar power.

Our alphabetical tour around the show is by no means comprehensive; many new products on show were incomplete or in need of a UK distributor. However, from a show which included some 300 exhibitors, we've tried to pick out some of the highlights . . .

Activision

Activision's fourth PCW show featured previews of shoot-em-up ***Thexder, Enduro Racer,*** the Arnold Schwarzenegger film tie-in **Predator,** and System 3's preview of ***Bangkok Knights,*** the follow-up to ***The Last Ninja.*** Also on the way is ***Police Quest,*** an animated arcade adventure from Sierra On-Line at £24.99, ***Helicopter Simulator,*** and comic adventure ***Leisuresuit Larry.***

Advanced Systems and Techniques

Advanced sells ST systems including the Mega's and disk drive update kits, and showed a new version of ***MegaMax C,*** "the fastest professional C compiler available".

Advanced Memory Systems

The ***Finesse*** desktop publishing system for the ST and Amiga, and ***Finesse Paint*** on the ST.

Anco Software

Emerald Mines, Pinball Wizard, Go Cart Racing, utilities such as ***Bob*** and ***Sprite Designer, Micro Text, Micro Calc, Micro Base, Winter Events,*** and ***Cycle Knight*** in a new ST version.

Atari World

Over 30 companies made up the Atari World exhibition, which included demos of the Mega ST2 and 4, the new SLM laser printer, the 1040STF and 520STFM, and a wide range of applications from desktop publishing to word processing, spreadsheets, games and comms.

Atari

Atari's new product announcements at the Show involved two of the most advanced technologies under development; transputers and CD-ROM.

The transputer project, based on the INMOS T800, has a 32/64 bit structure which allows incredibly fast graphics manipulation; something like an update rate of 13 frames per second on a 1 million pixel screen, with a processing speed of 15 million instructions per second.

The two proposed projects include an add-on system for the ST, and a stand-alone computer which would make even Acorn's Archimedes look dull.

Because transputers can be networked to increase their processing power, there is theoretically little limitation to the power of such machines. The Atari projects are based around a screen resolution varying from 1280 by 960 in four colours, to 512 by 480 with 16 million colours available. Development work is being carried out by Perihelion, a British company which includes ***Amigados*** author Dr Tim King.

Atari's CD-ROM project was announced in a very understated way, with a proposed price tag of £399 and delivery due before Christmas.

The CD-Read Only Memory system was first introduced for mass storage of sound sample data on E-Mu Systems Emulator sampling keyboards. CD, tough, can be used to store practically any form of data from music to graphics to software. As the name implies, though, it is a read-only system – you cannot write to a CD (yet).

The CBAR 500 prototype is a featureless black box measuring 10x10x4 inches. Atari intends to develop it as a catalogue retrieval, database and advanced games system, though no CD software is available yet. The CBAR 5400 can rub audio CDs as well as data CDs, at a transfer rate of 1.5 Mb/sec.

In view of the low-key launch of the transputer and CD-ROM projects, and Atari's penchant for testing the water before quietly dropping projects, we don't advise that you sell you ST or disk drives yet.

Cascade Games

Five new titles including ***ACE 2,*** a flight simulator described a "the ultimate head-to-head conflict", expected to be on release in time for Christmas at £19.95, and Pirates of The Barbary Cost at £12.95, Jim lad.

Computer Concepts

The ***Calligrapher*** word processor/DTP package at £60 + VAT offers several unusual features including scientific notation, while ***ST Doctor*** (a memory editor, disk editor and key recorder) and ***Fast ASM*** (a disk-based 68000 assembler package) were on show at £17 each. ***Fast Basic*** is now on disk as well as Cartridge at only £39 + VAT, while ***Back-Pack*** (nine desk accessories including calculator, clock with digital or analog display, alarm, notepad, typewriter, address book and RAMdisk) costs £42.61 + VAT.

Domark

Along with Streetwise and a new label, TV Games, Domark was showing ***Trivial Pursuit, Not A Penny More, Not A Penny Less*** (based on Jeffrey Archer's book and available on the ST by Christmas), ***Unitrax*** and ***The Sewer*** plus ***Blockbus-***

ters, Countdown, Bullseye, Treasure Hunt and *The Krypton Factor* from TV Games.

Star Wars will also be available on the ST by Christmas, and the ST version of the James Bond film *The Living Daylights* is also coming up.

Eidersoft

The *Campus* CAD 2D drafting software package, plus Eidersoft's successful hardware/software sound sampling package *Pro Sound Dsigner,* now with MIDI control. Also the *Quantum Paintbox* package offering up to 4096 colours on screen at once, using an unique interlacing method. The *Aladin* Macintosh emulator was previewed too; it appears by far the best such product so far. A twin double-sided 3½ in. disk drive at £249.99 debuted too.

Electric Distribution

Timeworks is a new desktop publishing package available for only £99. See the box for more details.

Electric was also showing a portfolio management system for home and professional use. Also on show was *Cyber Studio,* which combines the CAD 3D 2 package with Cybermate, an animation control package.

As an option you can buy the Stereotek glasses at £149; these plug into the cartridge port of the ST and create 3D effects on the screen (unless you're colour blind or only have the use of one eye). *Easy Draw 2* was also on show.

Electronic Arts

Newly launched in the UK, EA showed 20 new titles for various machines including *Bard's Tale 1, Chessmaster, Degas Elite, Marble Madness, CRL's Academy,* and *Skulldiggery.* Lots of type, but so far not many new products.

Frontier Software

Featured were the *Supra-Drive* hard disk in 20, 30 and 60mb versions (from £600 to £1700), plus the *MicroStuffer* printer buffer.

Glentop

Glentop was showing off the full catalogue of books as well as a vast range of software; *Graphic-Sheet,* a GEM-based spreadsheet with built-in graphics, *GFA Draft Plus* (a professional CAD package), *GFA Object,* a 3-D image manipulation package, and *GFA Vektor,* the 3-D graphics extension for the GFA BASIC interpreter, were on show for the ST.

Gremlin

Basil The Great Mouse Detective, Masters Of The Universe and *Mask* were the TV tie-ins, while Alternative Games, Superstar Soccer, Blood Valley and *Compendium also created a lot of interest.*

Hewson

The first 16-bit products, *Uridium* and Steve Turner's *RanaRama,* have previewed, but the event was overshadowed by news of the defection of software authors Graftgold to Gelecomsoft.

HiSoft

HiSoft BASIC 1, 1, "the fastest and most professional BASIC compiler yet released on the ST" at £69, the new *FTL Modula* compiler with interactive multi-window editor, assembler and linker all in one package, *DevPac* at £45, and *Saved* – a powerful disk doctor package – at £25.

Icom Simulations

The new *TMON ST* cartridge is called up on receipt of a system error, breakpoint or user-definable system call to examine the inner workings of any ST program. On offer are a debugger, single step facility, and the ability to set break points, display labels, search or checksum memory and so on.

Interceptor

Into the Eagle's Nest by Pandora in a new ST version, *Satar,* a complex new space game, and a preview of *Galdregon's Domain* which is coming up on the ST.

Kuma

The complete K-Series of applications, most available now on the ST.

On show were the music package *K-Minstrel,* and *K-Spell,*



K-Graph, K-Graph 2, K-Data and *K-Comm. KMax,* the transputer co-processor offering 256kB of memory, comes with an assembler called K-XPA supplied for £1450. *KMax2* uses an Inmos T800 Transputer, and software in Occam and C is becoming available.

K-Scope is a hardware/software package turning your ST into a full-function oscilloscope, while new products include *KRikki,* a painting package with frame animation, and *KRhymes,* based on Longman's Top Pocket Dictionary of Rhymes. This can be used as a desk accessory.

KRoget is another recent launch, being based on Roget's Thesaurus, and both this and the *KData* database are available at £49.95.

Level 9 Computing

Knight Orc and other games including the launch of *Gnome Ranger* at £14.95.

Llamasoft

Jeff Minter was demonstrating the *Colourspace* light synthesizer on the ST and previewing *Lightmage,* the expanded version to be launched next year.

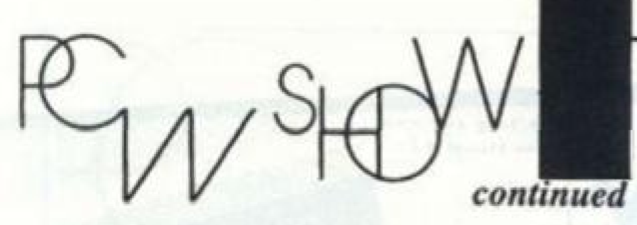
Lightmage features two cursors, controlled by programmable waveform generators or by hand, and various new colour mixing and sequencing functions are available. Patterns can be mapped onto three-dimensional surfaces, there are more preset patterns available and the MIDI output will be brought into use to network up to five STs.

Lightmage is icon-driven, includes a macro command system.

Also on show was *Die, Filth!!,* a witty preview of the forthcoming *Centipede*-inspired shoot-'em-up.

Mastertronic

New games from the Arcadia label, Americana and Rack-it ranges, the latter being developed by Hewson.



continued

Microdeal/ Michtron

Fright Night, Soccer, Leathemeck, Omega Run,l plus previews of Airball Construction Kit and Tanglewood. On the applications front, Microdeal showed the ***Easy Page*** layout package which now works with laser printers, the ***ST220*** Terminal Emulation package, the ***M-Cache*** hard disk drive cacher, ***STuff*** utilities collection, and ***Make It Move,*** an animation program compatible with all the popular paint packages. Michtron's ***GFA Basic Companion,*** which adds improved GEM facilities, was also previewed.

Pirates, Project Stealth Fighter, Airborne Ranger and other games. See last month's news story.

Mirrorsoft

With the PSS, Spectrum/ Holobyte, Mindscape and FTL Games lables on show, Mirrorsoft had a lot on offer. ***Bermuda Project,*** an "innovative graphic adventure", ST conversions of ***Spitfire 40*** and ***Fortress America,*** and apreview of motorbike racer ***Mean Streak,*** were just for starters.

Coming up – ***Power Struggle*** from PSS, and ***Final Frontier,*** a game set in a time when robots ruled the Earth, ***Battlefield Germany,*** and ***Annals of Rome,*** a historical game.

Mindscape previewed the ST version of the Amiga's ***Defender of the Crown,*** the heavily political ***S.D.I.,*** the gangster game ***King of Chicago,*** the Cinemaware project ***Sinbad and the Throne of the Falcon,*** plus ***Deja Vu*** and the spooky ***Uninvited*** and ***Showdowgate*** from MacVenture.

Spectrum-Holobyte's ***Orbiter*** space shuttle simulator is coming soon on the ST, as is a fantasy adventure called ***Dondra.*** FTL had ***Gravitar*** clone ***Oids*** and ***Dungeon Master*** coming up in ST versions. In the ST World area, Mirrorsoft's ***Fleet Street Publisher*** with the Atari laser printer was on demo.

Novagen

Damocles, the sequel to ***Mercenary,*** was previewed, but ***Backlash*** on the ST stole the show. It's a solid 3D fast-action arcade game priced at £14.95 and written by Paul Woakes. It features the most over-the-top laser gun effect ever devised, with the possible exception of Jeff Minter's latest!

Ocean

Renegade, Rastan, Gryzor (a tie-up with Konami), ***Combat School*** previewed, SNK's ***Victory Road, Psycho Soldier*** (the sequel to ***Athena***), ***Mad Balls, Platoon*** and more. Plus ***Where Time Stood Still*** from Denton, and ***ECO,*** which simulates a working ecosphere. All in video, coin-op or preview form; no finished ST products.

Palace Software

Palace was emphasising the 16-bit version of ***Barbarian,*** but also launching the new Outlaw label and previewing future plans. ***Starship*** is a 3D graphics space game, while ***Rimrunner*** offers multi-plane scrolling and high-quality animation in a shott-'em-up with a definite flavour of insects.

Robtek

A huge range including video switcher ***Monitor Master*** at £49.95, GEM spreadsheet ***Eazycalc*** at £49.95, an improved ***MacEmulator*** at £169.95, ***Lazerset*** desktop publishing (£149.95), the ***Hi-Tec*** three-slot cartridge expander, £49.95, astronomy package ***Skyplot,*** and £19.95 Diamond Games including ***Swooper, Extensor, Gambler, Hollywood Poker, KAOS*** and ***Alien Strike.*** Also, the wonderfully tacky ***Terminator*** hand-grenade joy stick at £19.95.

Silicon Solutions

Showing the ***SAM*** realtime digitiser with a variety of video input material from ***EastEnders*** to ***Dr Who,*** Silicon Solutions was also previewing a colour version without being able to give much ideal of a possible release date. The mono version at £249.95 certainly has enormous possibilities – sequences can be frozen, edited and reversed once captured and a 4MB machine can store 122 frames.

SAM can also convert US standard videotapes to UK standard, download data to DIP packages such as ***Fleet Street Publisher,*** and play back up to 2 minutes of video using a hard disk drive.

Also on show, the ***GenLock*** package which makes it possible to superimpose the ST's output over an incoming video picture – very useful for putting captions and effects onto video.

Timeworks DTP

GST Software unveiled the latest offering to shake the DTP market with the launch of "Timeworks Desktop Publishing" for £99.

Chris Scheybeler from GST said that although personal computer based DTP software will be a new market for the company, they have had a great deal of experience at page making and typesetting software for many regional and national newspapers, as well as the very successful ***First Word*** word processors.

Text can be imported from a variety of word processors including ***WordStar, Wordwriter*** and the ***First Word*** suit as well as standard ASCII files, and can be edited at any stage during the page making process. A particularly good hyphenation system is used when text enters the document so that the program does not have to work out how to hyphenate words each time a paragraph is reformatted.

Graphics facilities are comprehensive with a full ***"Easy Draw"*** like environment provided within the main program as well as the ability to import files from ***Neochrome, Degas, Gem Draw, Gem Paint, PC Paintbrush*** and ***Easy Draw.***

Although unable to say exactly which or how many fonts will be supplied he did say that there would be Helvetica and Times look-a-likes in 7 point sizes ranging from 7-72 point and several other large size fonts suitable for headlines. The program will use standard GEM fonts and output drivers so that it will support virtually all 9 and 24 pin matix printers as well as Postscript, HP and Atari Laser Printers.

2 Bit Systems

The ST Replay sound sampling system, now with a MIDI control option, plus the Digidrum sequencer.

Telecomsoft

Firebird with preview of ***Flying Shark, Bubble Bobbie,*** and the long-awaited ***Star Trek, Dark Sceptre,*** and, of course, ***Elite 2.*** Rainbird previewed the ST version of ***Time and Magic*** by Level 9 – it's a triple adventure comprising ***Lords of Time, Red Moon*** and ***Price of Magic,*** with digitised background pictures and advanced parsing – and the ***Universal Military Simulator*** by Intergalactic Development, which allows the player to define an "almost infinite" combination of possible battle games.

A futuristic aircraft carrier is the setting for ***Carrier Command*** by Realtime Software, while Magnetic Scrolls was previewing ***Jinxter,*** and favourites such as ***The Pawn.***

Applications packages included Advanced OCP Art Studio and ***The Advanced Music System,*** while the Amiga version of ***Dick Special; The Search For Spook*** was used to preview the upcoming ST version of this cartoon-like action game.

US Gold

US Gold was more guilty than practically any other company of showing videos, coin-ops, posters and leaflets rather than finished products. Forthcoming ST titles include ***outrun, Impossible Mission 2, Trantor, Wizard Warz, Captain America, Gaunlet 2, Solomons Key,*** and a range of strategy titles from SSI.

Virgin

Virgin coughed up green phlegm and proudly announced ***How To Be A Complete Bastard,*** the game of the Adrian Edmondson book. Due earlier on the ST is a new ***Duelmaster*** game based on the series of books of the same name, titled ***Challenge of the Magi.*** An ST version of the ***Scruples*** boardgame is also due for November.



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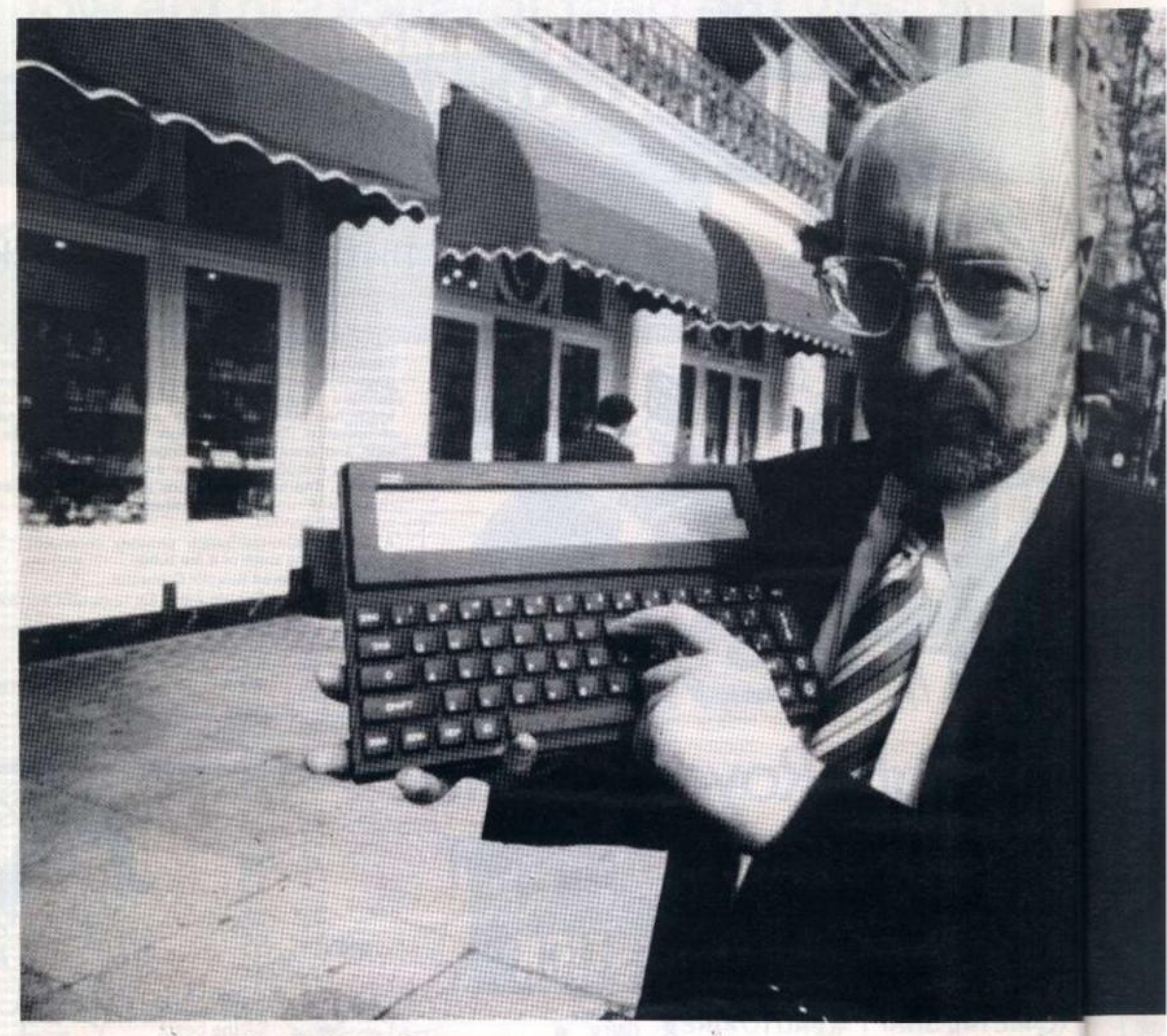
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• Sir Clive Sinclair holds aloft his latest baby, the Z88.

ON THE ROAD WITH Z88

MARTIN BANKS WANTED TO FIND OUT HOW TRULY PORTABLE IS THE Z88, SO HE BOUNCED IT AROUND THE U.S.A. . . .

Here we sit on a Monday morning having just been introduced, the Sinclair Z88 and I. We don't have much time to get acquainted, because tomorrow morning we are off to the great wide beyond, or Boston, USA, as it is nearer. So I am going to find out how the thing works in my normal way, which is to switch it on and see what happens. Manuals tend to get read only when necessary, which is probably stupid of me.

The first point to observe is that the Z88 doesn't seem to like radios too much, or more to the point, radios don't like the Z88. I like to work with the radio on, and mine hisses and snarls alarmingly because the computer is on. So I turn it off, and when I turn it off, I notice that the radio clicks regularly with the computer's memory refresh.

The keyboard, though as quiet as claimed, does seem occasionally unreliable, the space bar being a bit difficult to operate at times. By and large, however, the immediate first impression is favourable.

One reason for getting the Z88 was the fact that I was about to embark on a business trip. As the beast is supposed to be used for working in situations just like that, it seemed as though a real road test could be made. An important part of trying to



use it in earnest was the ability to move files created on the Z88 over to a PC in WordStar format, a feature much touted by Cambridge. What more could a man of my limited abilities desire? I could write features on it in the US, rather than being bored watching TV in hotel rooms.

As I am travelling foreign parts, it will be useful if the PC link works. So I try it out. As far as I can tell I have connected things correctly and run the program right, but it doesn't seem to want to know about taking the file off the Z88 and on to the PC's disk. There could be any number of reasons for this, with the most obvious being that the RS232 cable pin-outs are different on my Olivetti than on an IBM PC, though I don't think so. Ho hum, this could be a problem if I use the Z88 in earnest.

My failure to get the Z88 to communicate with my Olivetti M21 was obviously a drawback to really trying out the machine in anger. As you will see further on, it proved to be a soluble problem, though not until my return from the US. Despite that, it seemed like too good an opportunity to miss not to take the machine with me. After all, if it is meant to be used 'on the move', then testing it on the move would be an important job anyway.

Well, here we are on our way, with the first port of call being the railway station and, oh joy, my first chance to impress fellow travellers by sitting here working the Z88 on the train. It is worth pointing out that it does work: the electrics overhead don't seem to affect it at all.

Now to see what the effect is on the assembled multitudes on the train. Depressingly little so far as I can see. Most of them have their heads buried too far into their newspapers to bother with a chap like me trying to be flash. An important item to note, just in passing, is that the beast sits squarely on the lap and is quite useable on a train. The display, though small, is easily legible.

In passing, the screen does have one little quirk that is a bit disconcerting at first. When it becomes full (about six lines) it suddenly shifts upwards to the top. This means the text is not always where you expected to see it, which can be surprising at times.

Well, so far so good. We have passed through the tube, the airport X-ray machines and are now resident in the departure lounge. The machine seems to work OK. Isn't technology wonderful? After much messing about, we are at last on the plane after a great and glorious cock-up at Heathrow. The usual story, the computer went down so they couldn't do seat assignments. Anyway, the beast continues to work well and has already attracted some attention. Kudos at last.

Remarks time. The keyboard seems to be quite reasonable, with enough of a positive 'depression' feeling to let you know that things are happening without the need for a 'click'. (The click can be switch-selected if that's what you want.) Some of the keys, on this model the 'w' and the space bar, seem a little more reluctant to work than others, but I feel that could be as much to do with the angle at which they are hit as to a straight technical problem. I suppose that this could be a potential problem in a laptop, for it will often be used in unlikely places, with fingers hitting the keyboard at odd angles.



For example, I am writing this bit with the Z88 perched on the table provided by the management of the aeroplane. Needless to say, the table was never designed for supporting computers, even those weighing only two pounds, and I am chasing the thing up and down as it bounces around (the table, that is, not the aeroplane).

Test

Lunch has come and gone, as has the film, which was awful. Next comes the announcement of the Captain's retirement after 34 years and 25,000 hours flying. We all earnestly hope that he waits until we land before finally handing over his joystick.

Pipedream is, generally speaking, a sound piece of software. Calling it up is easily achieved from the pop-down menus. To get that far, the machine has to be turned on. This you do simply by pressing both shift keys at the same time. This will bring up whatever you stopped with last time you switched off – also achieved by pressing both shift keys together.

This trick of going back to where you stopped last time is rather clever. It means that the file you are working on doesn't have to be saved before switching off, or before changing to a different task. All you need do is press the MENU key and up pops the menu.

From this you can select a wide range of functions, either by moving the cursor over your selection, or by keying the optional key sequence. These use either the Square or Diamond keys, followed by a sequence of letters, and can be called up at any time by using the key sequence. The square and diamond keys, once the sequences are learned, are extremely useful.

They do have some functional quirks however, which are odd, and don't always make the beast the easiest thing to use. My brother, who lives in Washington and with whom I spent a weekend, was the first to discover the problem. He tried out the Z88, and found he was getting some odd losses of data and funny changes in margins that were hard to explain and, at the time, impossible to correct.

The problem proved to be connected to the square and diamond keys. You have to watch that you don't press either of them by mistake. If you do, and follow it by a normal keystroke, you get the function assigned to the key.

Deletion

For example, press the diamond key all by itself, wait a while, then press the delete key (because you have decided you only want to delete one character rather than the whole line). The result is the deletion of the whole line. I tried leaving a gap of 15 seconds between the two keystrokes, for example, but it still deleted the line I was writing. That is something that shouldn't really happen. It should be a two-handed job to perform those sort of functions, just so you know you are doing something special.

I don't propose to give an extensive breakdown of each Z88 function, as that was not the prime purpose of this test. What I can say is that the ones I used, Pipedream as WP, the Diary and the Calculator, all worked well.

There was one other function, the communications software, Import-Export, whichl frailed to get going while on the trip. This comes in three parts. There is the integral software on the Z88, a software package to run on the PC and an RS232 cable to connect the two together. This plugs into the single serial port of the Z88, which can also be used for driving a printer. I took the disk and cable with me, to try it on my brother's IBM XT. It didn't work there either.

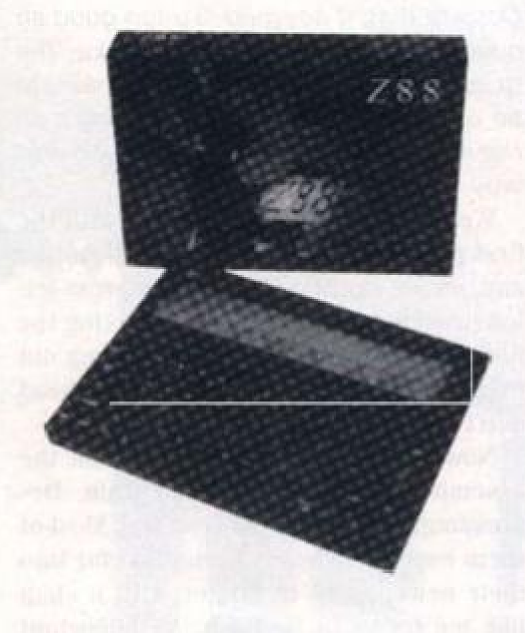
The down-loading saga. There is something amiss. Now, I am prepared to admit that it could be me because I have made several silly mistakes on this trip, but I have read the manual several times and fail to see what I am doing wrong. It is not necessarily a problem with my Olivetti after all, for I tried on my brother's XT and got exactly the same results.

No matter what I try, I cannot get this thing and a PC to communicate, regardless of the fact that I have the correct software and cable available.

This has proved a pain because I do not dare commit too much copy to the machine, and I would have liked to. I could have been writing at least one feature ready for early delivery when I get back.

Yes, that was a shame, especially as I found out what the problem was after I got back, and managed to get the Import-Export software working very well.

The problem lay at the feet of both myself and Cambridge Computers. As I said at the beginning of this review, I tend not to read manuals and just dive in. When I found that the link did not work, I read the manual that came with the disk. This, it transpired, has some 'economies with the truth'. First of all, the important facts are actually on the README file on the PC disk, where it tells you how to SETUP the package for your machine (why this isn't in the manual I don't know). You also have to read both the software manual and the Z88 manual together to find out the full sequence of events to get communications going.



Menu

First of all, after linking the two by RS232 cable, you call up the program, IMPEXP88, on the PC. This brings up the main menu. The manual doesn't tell you, but even if you want to convert a Z88 file to WordStar format, you don't select that option. The one you select is No. 6, Receive File From Z88. This will ask for a Pipedream filename and a destination filename (the default is the same name). You are now told the PC is waiting for incoming data.

Now set up the Z88 by selecting import-export from the menu. From the subsequent menu select the Send function, give the filename (having ensured that you have deliberately named and saved the relevant file, because you don't have to with the Z88) at the prompt and press return. That is all there is to it really, and it works. The system allows you to, then convert this file on the PC into either WordStar or Lotus format (Pipedream is a dual purpose WP/spreadsheet).

I have since made extensive use of this facility by using the Z88 to work in more convivial locations than my office at home.

Would it pass the 'I want one test?'

The answer is a reserved yes. As a writer I find it has the general level of facilities that I need, with a keyboard that is quite reasonable and a display that is legible in a wide range of lighting conditions. It has also shown itself to be quite tough, having shared the same compartment of a battered shoulder bag with a camera, spare lens, tape recorder, spare tapes, diary and note books. I didn't set out to break it, but I didn't set out not to either. If only I could get the info out of it and on to another machine, it would be really quite snazzy.

Communications

Of course, communications would have been a great advantage, but that was not to be. Shame. If I could have got into BT Gold from the US I would have been made. By the way, Cambridge says that we can't have an on-board modem because of the different international standards, but what about one with an acoustic coupler output? Ericsson did one for its PC-compatible portable, with little cups that clipped over any phone with elasticated straps.

Needless to say, since writing that, just such an acoustic coupler has appeared for the machine. Hopefully, if that nice Mr Sir Clive Sinclair is listening, I might get the chance to try it out.

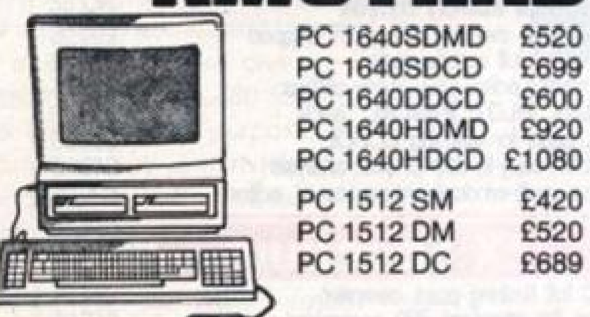
Also, since cracking the problem of communicating between the Z88 and my Olivetti, my opinion of the machine's usefulness has gone up considerably (though I do know of one other Z88 user who, having had the comms link working well for a while, has suddenly had it die on him for no apparent reason. So, maybe there is still a possible doubt.

Despite that, the Z88 is a machine I can recommend to anyone who wants a simple lap portable computer with respectable capabilities. It has three features of the four I feel such a machine should have: it is robust, it works, and it communicates with my PC. The fourth, communications with the outside world via the telephone is now available but untested, and is an external add-on anyway. To balance that observation, I accept Cambridge's statements about trying to get different types of modem built in.

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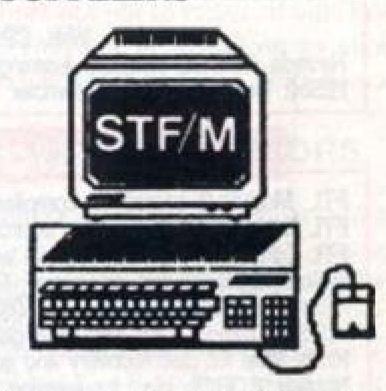


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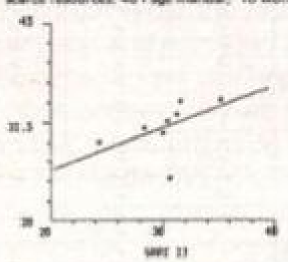
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DING DONG E



ONCE UPON A TIME THE LADIES OF ST. BRIDES PRODUCED THE SNOW QUEEN. NOW WE HAVE THE GRUESOME JACK THE RIPPER.



• A ritual murder in *Jack the Ripper*.

Meet Miss Scarlett, one of the proprietoresses of St. Brides School for Ladies, enthusiasts for all things old and creators of Jack the Ripper, one of the most gory games to reach the shops in many months.

Miss Scarlett and Miss Langridge, another of the Ladies, were to be found wandering around the PCW show, enthusiastically testing the output of their competitors and looking for free drinks. Clad in crinolines (*hooped petticoats used by Victorian ladies to give their skirts a flared appearance – Fashion Ed.*), shawls, bonnets, veils and other garments more reminiscent of the French Revolution than the Silicon Revolution, it would be fair to say that they were conspicuous. Mounting the stairs from the Electronic Arts stand on the ground floor to the Press Office on the first, business gentlemen and games-obsessed youths alike spontaneously rediscovered long lost codes of chivalry and parted like the Red Sea, gallantly removing their paper MicroProse caps, using them to wave these unusual women on to the top of the flight.

The Ladies' professional and personal interests are not those one would normally associate with computing. Miss Scarlett is the headmistress of St. Brides, to be found in an isolated village on the coast of County Donegal, Ireland. St. Brides is not mentioned in the same breath as other venerable institutions for the education of young ladies such as St. Pauls, Wycombe Abbey and North London Collegiate School. This is not without reason. None of the above feature any longer on their curriculum subjects such as botany and calligraphy. Nor do the girls gather round in the evening to listen to their favourite discs on a wind-up gramophone. Nor are the girls all over 20 years old.

St. Brides exists as a temporary time warp for women from all over Europe and America who regret not going to the girls' schools they have read of in a library full of fiction from *Vanity Fair* to *Fifth Form at St. Clare's*. This time warp is predominantly Victorian, an era favoured by Miss Scarlett, but some of the 'girls' are more interested in the "frivolous" 1920s and 1930s, so an oddly anachronistic mixture of styles is to be found by a visitor to the school.

Computers

Quite where computers fit into this situation is difficult to understand. They do not part form part of the school curriculum but stem from a private pursuit of Miss Langridge. "Computers are great fun", she declares, and that is more or less all we are likely to find by way of explanation.

She is unashamedly non-technologically minded, preferring instead to regard computers as magical instruments, sources of unlimited wonder and entertainment. Miss Langridge is particularly keen on shoot-'em-ups.

Her interest in playing games led in turn to writing them. Around her was formed the loosely-affiliated, all-female team known at The Ladies of St. Brides. Other members are Jenny Faulkener (known also as Languid But Deadly) and one Miss Martindale. Some of the more shadowy contributors prefer not to be named.

The first game they offered was *The Secret of St. Brides*. Published and, initially, distributed by themselves, it was an adventure starring a girl called Trixie Trinian who comes to St. Brides on holiday and finds a community of strange people living in the past. This semi-autobiographical tale originally appeared in 1985 but is likely to be re-released in the near future.

1986 saw three more games arriving on the market. *Snow Queen*, for Mosaic, was a computerised rendition of the Hans Christian Andersen fairy tale. It was not a big seller but it was unusual in that it attracted young girls to playing with computers. "It is definitely a female game", says Miss Langridge.

The *Very Big Cave Adventure* and *Bugsy* were their most successful projects to date. Both are comedy adventures, the former a witty parody of the famous The Colossal Cave.

Two new games are now due for imminent release. One, *White Feathered Cloak*, was originally conceived by Marc Peirson after a lengthy poem he has written about good and bad gnome kings. The Ladies took over for the writing of the text and the programming. Miss Langridge reports that it has been described to her as a "yuppie" contrast with most people involved in the game but she confesses to not knowing

BELLES

The graphics are more violent than anything ever seen before on a computer screen. They make *Barbarian* look like out-takes from *Play School*.

• No three games from the same people could be more different.

the meaning of this term.

Unfortunately for Starlight, the label releasing the game, *White Feathered Cloak* is likely to be overshadowed by the new St. Brides adventure to be launched on CRL, *Jack the Ripper*. It is difficult to imagine, graphically at least, a game more different from the earlier *Snow Queen*. The aim of the ladies is to be as authentic as possible in their recreation of the real story of those gruesome Victorian murders. This goes so far as to reproduce with nauseating explicitness the manner in which the female victims were disembowelled. The graphics are more violent than anything ever seen before on a computer screen. They make *Barbarian* look like out-takes from *Play School*.

The Ladies declare that it is not their intention to shock. They positively desire an 18 certificate, not, they claim, to give them high publicity exposure but to warn off those who might well be shocked by what they see. Some people might believe that such pictures should not be allowed at all because they debase and weaken attitudes towards violence.

Mistresses Scarlett and Langridge respond to these allegations by pointing out that the nasty bits are few in the game and that when they do appear they are entirely relevant to the story at those points. It is the good old-fashioned argument of authenticity.

Violence

They are also dubious that graphics of this type do actually incite people to violence and stress that in Jack the Ripper the player is attempting to exorcise evil by discovering who is the murderer. Most computer games, they say, can be seen as an attempt within oneself to make good triumph over evil. Hmm.

All this may be true but there is no doubt that *Jack the Ripper* is being marketed by CRL on the strength of its nastiness. Three of the four screen shots on the back of the packaging are high in gore content. The blurb above the pictures ends with a 'come on' of the type normally found on the cover of pornographic magazines: "If you are not fully prepared to undergo an experience which may at times be decidedly unpleasant, please do not buy this software package". The Ladies say that they wish to involve women more in computer games. Are they that much concerned if they are happy for such graphics to be found in their works?

The Ladies of St. Brides are difficult to understand. They are an enormous anomaly in the male-dominated, futuristic computer world. How much is hype is difficult to assess. Can they really be obsessed with the past (they are members of a loosely-defined group known as the Romantic Society which exists to help people wishing to pursue an old-fashioned lifestyle) if they spend so much of their time obsessed with computers?



• Don't look at this picture unless you are over 18 years old.

They live in a sorority but are they concerned with the welfare of women in general? They say *Jack the Ripper* is serious but are they ever serious about anything? They are a persistent enigma but it is one which sells a lot of games. I for one welcome them; they make for an interesting contrast with most people involved in the computer world.



San Mateo, California–Silicon Valley doesn't live up to its reputation, not , at least ,that part of it inhabited by US homel entertainment software champion *Electronic Arts*.

Remember the stories we used to hear about how Silicon Valley was all about creative bods sitting in jacuzzis and coming up with technology to change our lives? Well, it's not like that. Not very much.

The company was founded in 1984. This was not a good time to be starting a games software concern as Atari, Mattel and even IBM were dying a death in the home computer hardware market.

The company's first game was a modest little affair called *Hard Hat Mac* and it sold moderately well, enough to allow Trip and his team to talk about quite immodest expansion plans and to develop further his idea both of 'publishing' software and of handling the distribution of that software.

The idea behind all this was bound up in what EoA now likes to call it's company 'mission': to produce and distribute through consumer channels the software that makes home computers worth owning.

It seems to have fulfilled that mission – and the company bank account – pretty well so far. It took in some $27 million (US) for calendar year, 1986, making it the fastest-growing firm in the home software industry since it started.

By the time I visited EoA in September, 1987, it was boasting $10 million dollars (US) in liquid assets. This is its 12th quarter of profitability. If all this sounds a little like corporate mumbo-jumbo and not enough to do with games, it is because EoA has spent as much time building a corporate structure which will stand the test of time as it has commissioning games with a reasonably long shelf-life.

EoA's biggest 1986 hit formed only 5.3 percent of sales, although some 11 titles have already sold more than 100,000 units since the company started. Hawkins says this proves the company is not a one-hit wonder. Cynics might say that it is a no-hit wonder, given its self-described lack of a 'monster hit'.

However you measure it, EA still has to be considered something of a success. Trip Hawkins puts this down partially to the company's 'movie style' of making games, involving an overall 'director' for the project, specialists for sound effects, music, graphics and plotting of the same AND, of course, the artist who came up with the idea in the first place. This approach makes EoA somewhat uniue in the software publishing arena.

The development of a game is a creative process as with all other media,' says Hawkins. 'Software artists (as opposed to those involved as in-house programmers) make the best products. The next great product isn't in your lab.'

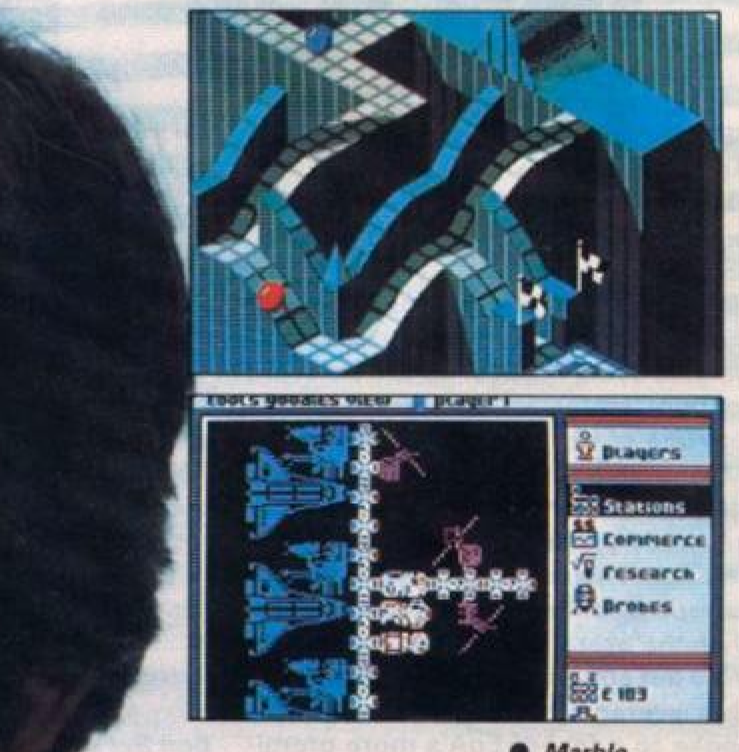
Despite allowing all this creativity, Hawkins warns that it has to be channelled and controlled properly. 'It's hard to decide when a product is finished,' he admits, giving an example of one area where control is needed, 'but we do need to have people who are independent. We want them to have big egos and to believe in solving problems. If they're prima donnas, that's fine, because it proves they want to make it on their own.

One area, however, where Hawkins would like to see a little less creativity is the user interface. He draws an analogy between computer software and automobiles. Early cars, for example, each had a vastly differing 'user interface' until volume sales and user preferences – not technology – forced a standard method of operation.

To discuss these issues and keep EA's 'prima donnas' sweet, Hawkins says that it is also important to make the programmers' job more fun. 'For example, we have an annual artists' symposium banquet, awards for our artists. We have developed a special artists' workstation for them to use.

When asked the key to developing better products, Hawkins says that it is to operate on a broader and more efficient scale: 'We have ambition and want to see more products developed. Making a big investment is consistent with philosophy.'

He gives as an example the huge commitment EoA made to the completely unproven Commodore Amiga when it was released in August 1985. Despite the massive investment in applications such as Deluxe Paint and Skyfox, EoA claims that it recouped its investment on Amiga software development in the first week of sales. It also gave the company an edge in developing applications for other



● *Marble Madness* and *EOS* are two parts of the winning Electronic Arts formula.

Trip Hawkins (main pic) is a happy man. His company Electronic Arts is the biggest name in U.S. games software. Geof Wheelwright looks at the secret of his success as EoA opens for business in Great Britain.

ON A GOOD TRIP



6800-based computers such as the Apple Macintosh and the Atari ST. Electronic Arts now has more than 31 projects underway for 68000-based architectures.

Paradoxically, EoA seems to be aiming its products at older customers – despite doing much of its current work for very 'young' computers. The average age of its customer is apparently 27 and this customer enjoys sports simulations, aricraft simulations and generally playing the hero in realistic settings. This user goes for the 'deeper experiences' and is somewhat older than the average budget game buyer.

To get an idea of just how games for this average buyer are produced, I spoke to a few of EoA's more prominent artists. Dan Silva, for example, created the best-selling *Deluxe Paint*. This package has done more for sales of the Commodore Amiga than all of Commodore's own advertising combined.

Silva's success relates largely to his passionate belief in the home computer. he was working at the Xerox labs in California when he and some other colleagues become interested in the then-fledgling home market. 'There's no limit to the freedom of what you can do in the home market,' he says. Hinting at his ideas of how the computer can be used for anything from manipulating and animating images to developing sounds and music, he says that the beauty of the home computer is that users are creative enough to consider non-business applications. 'You can use the computer as a media machine rather than a word-processor,' explains Silva.

Tools

His first big job for Electronic Arts was to build graphical tools for programmers to use when writing games. 'A graphical tool which I wrote then became Deluxe Paint,' he says. 'It was based on something I had written for the PC.'

'Deluxe Paint was something I did because I wanted it and that I think is why it was successful,' he adds. 'When I got it to the point where it didn't do what I wanted, I would add more to it. Bringing it out as a product encouraged its development even further as other people came up with suggestions and ideas. The second version of Deluxe Paint was arrived at because of that.'

He admits, however, that he was also encouraged and inspired by the post he received from Deluxe Paint fans: 'The letters did come and I was surprised and pleased, but using an application is the only motivation I can get to program. I want to see something happening on the screen so I can use it.'

"The average age of its customer is 27. This user goes for the 'deeper experiences' . . ."

Will Harvey, author of the company's best-selling *Music Construction Set* software agrees – particularly when it comes to porting software from one machine to another. 'I find a port boring', he explains. 'I like to have total freedom when working on a product.'

Harvey is also more of a loner when it comes to working on new entertainment software products and doesn't necessarily find that collaborating with a large amount of people helps. 'They are in charge and make the deal, but they must inspire the artist to do the best job possible,' he says. 'The best stuff they'll get is from the artist who does it all himself and has a contract to motivate him by advances or bonuses. It is totally important that it is in the interest of the artist, to do the best job possible.'

Team

He admits, however, that artists these days do need to work with others in developing and selling a program and suggests that the ideal number is probably a 'production team of five to ten people'. Harvey also says that this will become the case increasingly as home machines become more sophisticated. 'All the interesting machines have at least 512K and if you don't fill it up, you're not doing as good a job as you could. That's where the challenge will come,' he says. 'Most games even today have programmers doing their artwork and it is pretty obvious. You need not just graphics artists, but also an animator.'

Another Electronic Arts artist (who this time works through contractor Lucasfilm Games) with a special interest is Noah Falstein, who scored a direct hit earlier this year with his highly-realistic *PHM Pegasus Patrol Missile Hydrofoil* simulation. It was one of the first such naval war simulations of this type available from anyone.

His current project, provisionally called *StrikeFleet*, is another topical naval war game simulation. This time it is set in the Straits of Hormous, using the same ships, subs and carriers that were actually in the Persian Gulf at the time of writing. 'EoA has been very good to work for' says Falstein. 'They have a good understanding about what makes a game fun, the PR people have been good at getting publicity. They have commissioned big ads and can pick out the best parts of the game to be publicised.'

Effects

Despite his enthusiasm for topical strategy and simulation, Falstein does worry about the effects of these games on their users, let alone ponder the morality of it all. He says, however, that sometimes a highly realistic game can bring important considerations home in a way that no other medium could manage. 'There are political and ethical implications: our (US Navy) warships are eggshells armed with sledgehammers and we are recreating this (in StrikeFleet). You can get a good idea of the vulnerability of modern warships and the sense of paranoia a warship commander has to have,' he explains. 'On that level, it's a very adult game but it is also an exciting arcade game with lots of missiles and explosions. We have had many discussions about the propriety of it.'

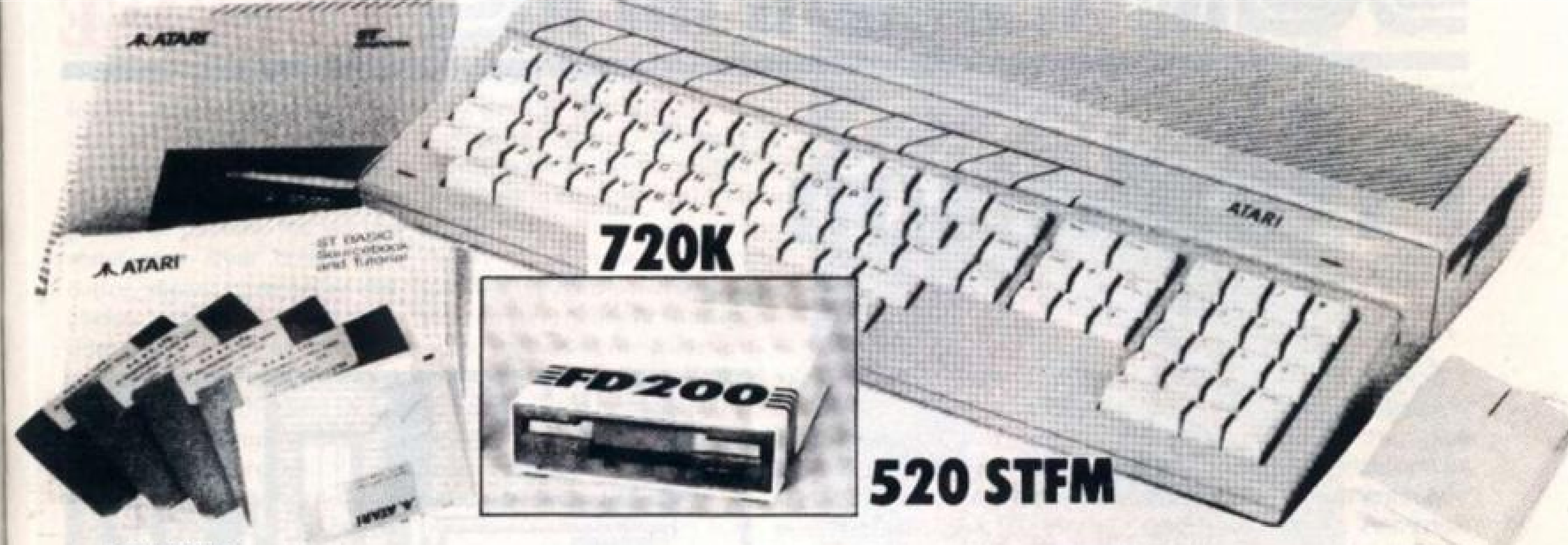
Those discussions have also involved real members of the Navy, whom he met when doing the research for PHM Pegasus. 'We don't want to be saying to people, "War is lots of fun, let's go out and kill as many people as possible". 'That's very irresponsible;' adds Falstein. 'One of the crew members on one of the hydrofoils (featured in PHM Pegasus) is one of the ones the Navy has decided to send in its contingent to Persian Gulf. I have mixed feelings about that because this person I met is going out to Persian Gulf and might get shot at.'

Meanwhile, far away from the Persian Gulf, Electronic Arts is setting its real-life sites on the UK, where it has just opened a subsidiary company with some 40 staff and a heavy commitment to provide and develop new games in this market. EoA seems to be making a better job of expanding the American empire than does its country's navy.

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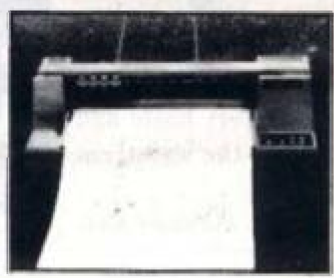
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SOFTWARE RELEASE

Prohibition

Atari ST £19.95
Publisher: Infogrames

New York in the 1920s is plagued by gangsters. The police are finding the menaces increasingly difficult to deal with. They need a cold blooded mercenary – someone like yourself – to dispose of as many bad guys as possible. They'll pay well too . . .

So, the scene having been set, the game gets under way. The idea is to shoot the guys who appear either at windows or at the top or bottom of the buildings within a specified time limit (four seconds!). If you don't shoot them . . . well, they'll shoot you. It's as simple as that.

You're in control of a target which you move to the required position in order to shoot the gangster. It's quite a tricky process, and I found that I had more success using the keys than I had with the mouse.

Some of the gangsters are sick enough to hold women hostages. There seems to be very little that you can do about this, though – you don't realise that he had a hostage until you've shot her!

I feel that Infogrames has wasted a promising plot by lack of variety. All there is to do is knock off one gangster after another, and boredom soon sets in. The odd mission or two or a bonus screen would have helped considerably.

The backgrounds are effective and scroll well, and the monochromatic characters,m simulating the old film style, a novel idea. The picture which springs up when you dodge is excellent, and it is also very realistic.

The digitised screams and yells aren't too bad either, especially the strangled shout one of the gangsters makes when he falls from the rooftop.

However, the dull playability really ruins 'Prohibition'. It should have been a classic – as it stands, it's a very basic and tedious game on the shoot 'em up theme.

Connor Meo



- Above: Bang, bang, yawn, bang, bang, yawn . . .
- Below: Bang, bang, zzzzz.



Street Sports Baseball

£9.99 tape £14.99 disk
CBM64
Publisher: Epyx

Having exhausted the limits of professional sports, with the possible exception of synchronised crocodile wrestling, Epyx in America is trying to breathe new life and a bit of street cred into the old sports sim software by coming up with *Street Sports*, the backyard equivalent of the professional game. The fact that neither Street Sports nor baseball mean too much over here hasn't stopped Epyx frisbeeing copies across the Atlantic. At *Your Computer* we naturally come up with a very British response to this endeavour and say that the game's a bit like the curate's egg: good in parts.

It certainly doesn't start off well. Having chosen whether to play against a friend or the computer, you get to the serious business of choosing the teams from the kids on the block – and one screen shows you the kids lounging around said block. Each child is highlighted in turn and a potted biog comes up at the top of the screen. It comes up for about one trillionth of a second, which sends you scurrying to the helpful instructions to read all about Bojo who has a good arm

and David whose long fly balls go first class all the way. I'd be interested to meed Kim, who apparently hustles on the bases.

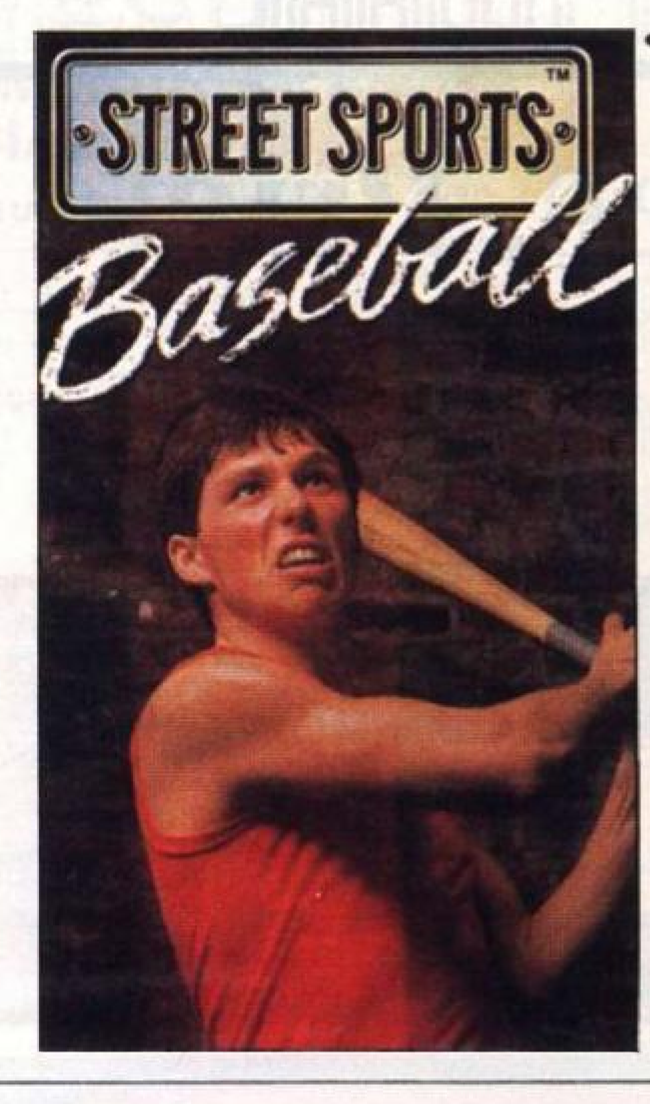
You can save your favourite teams and load them in each time, but having done the choosing and flipped the coin, it's on with the game. Whether batting or pitching you get the same view from behind the batter, showing just batter and pitcher, while the right-hand third of the screen gives a bird's-eye view of the whole diamond with little blobs showing where the various players are as they run around.

When batting there's not a lot of action. Press the fire button once to swing the bat and tell the pitcher you're ready, then about nine hours later (or so it seems) the ball comes down and you press fire again to try to hit it. One or two practise swings whow you that the batters do very different styles, but it's literally a hit or miss affair as you try to time your swing to whack the ball.

Pitching gives you much more variety, as you can launch fast or slow balls, left or right curveballs, and control the movement of the ball all the way. After the pitch you move your nearest fielder to the ball and throw in the direction of the appropriate base, although there's no option for the fielder to catch the ball. When batting you can steel bases or slide in.

The options in the game are rather limited, with long pauses between rounds. That definitely counts against a fast-action game. The standard of the computer-controlled team is also way too high. It never fails to hit the ball and does everything absolutely perfectly. If your aim is to play against a friend, fine, you might enjoy the graphics and get into the game, but this isn't the greatest simulation around. Your tenner might be better spent elsewhere.

Mike Gerrard



• **The good news is that you won't have to see this bimbo on the British cover. The bad news is that the new cover doesn't make *Street Sports Baseball* any better.**

World Class Leader Board

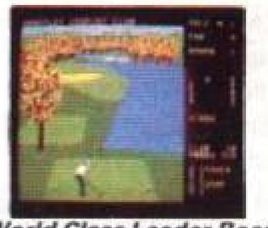
IBM PC £24.99
Publisher: U.S. Gold

A number of golf games have become available for the PC in the last year. The list is now augmented by World Class Leaderboard, distributed by U.S. Gold.

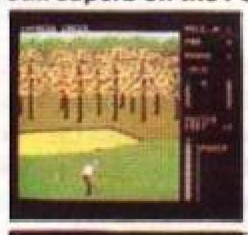
This simulation has already proved a success on other formats, notably the ST. I do not see how it can fail to be just as popular on the PC. This is a game demanding skill, co-ordination and intelligence, all realised with a remarkable degree of authenticity to make it easily the most convincing simulation on the market.

Between one and four players can participate, playing their way through a selection of up to four 18-hole courses, three of which are models of real courses (St. Andrews, Doral Country Club and Cypress Creek) and one which is designed by the programmers. The three real courses feature all the dimensions, bunkers, trees and water hazards of their originals; the last seems to combine all the most difficult details of the others, making it a very tricky undertaking indeed.

The golfer himself is drawn with a realistic swing. The view of the course is far more convincing than in other golf games I have seen, with an eye level aspect straight down towards the flag, provided that it is not obscured by trees. This is supplemented by pressing the T button to give an aerial view.



• ***World Class Leader Board* is still superb on the PC.**

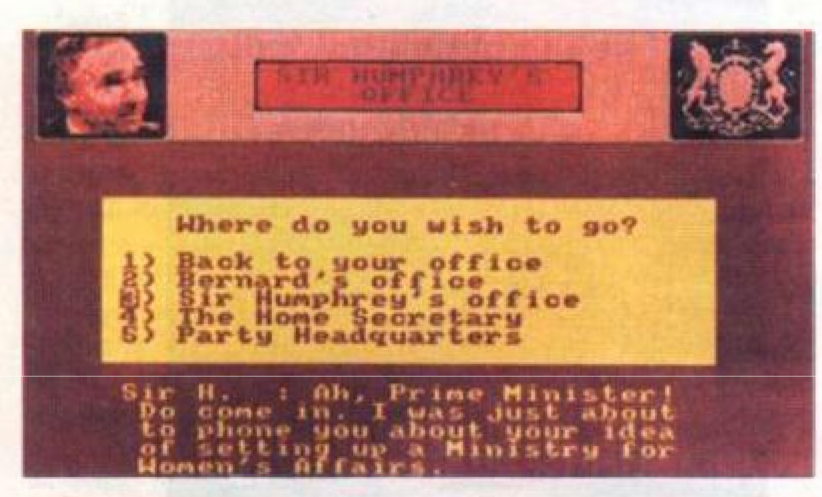




A stroke is played by depressing the 5 button on the numerical key pad. You release the button as near as possible to the zenith of the up-swing in order to achieve maximum drive. On the down-swing the 5 button must be depressed once more as close as possible to the point of impact of club on ball. This calls for quick reactions and acute judgement because pressing the button too soon causes the ball to hook to the left while pressing it too late will cause it to slice to the right. Had this been a real golf game, I may well have taken off the

Yes, Prime Minister

(A) £14.95 (B) £19.95 (C) £24.95 (A) Spectrum, BBC, CBM64 and Amstrad CPC tape (B) BBC, CBM64 and Amstrad CPC disk (C) Amstrad PCW and PC compatibles
Publisher: Mosaic





• **Amstrad and Spectrum views of *Yes, Prime Minister*.**

At last you have your chance to see how you can measure up to the Prime Minister when it comes to running the country. Your task is made slightly easier in this game as you don't have to compare yourself with Supermaggie, just everyone's favourite PM, Jim Hacker. Can you maintain the 50% popularity with which you start the game in the face of adversities like drunken Ministers and adversaries like Sir Humphrey Appleby?

It takes more than a simple word like 'strategy' or 'adventure' to define a game like this – it's more of an icon-driven multi-choice comedy strategy game, quite definitely aimed at the Christmas present market with lots of appeal to families and those who don't care what category a game is so long as it's fun.

And *Yes, Prime Minister* is certainly fun. The storylines in it are all original but so faithful to the Whitehall spirit that you feel they could have been lifted from the TV series. The TV scriptwriters gave the words their blessing, so that says something for authenticity.

You take the role of Jim Hacker and the aim is simply to get your popularity up as high as possible in the opinion polls over the course of five days (five separate game sections). You are credited with 50% to begin with which is not bad for any politician. The aim doesn't really matter, though, as there are as many laughs to be had when your popularity's plunging and about to go down the drain.

The screen presents a view of your Downing Street office, and you move a pointer to access various options. If the phone rings, move the pointer to it to answer it and the resulting conversation comes up on screen. You can open the drawers on your desk, examine telex messages (Hackergrams!), use the intercom, open the safe and put the pointer over the door to leave the office, when you'll be presented with a menu of possible destinations. These don't come up on screen, just the conversations that take place there, though there are some nicely digitised graphics of the TV actors at the top of the screen.

In the style of Adrian Mole, you have to choose between the options presented at various stages. When a Minister is arrested for drunken driving just as you're about to launch a road safety campaign, would you come clean to the press, promote the constable who arrested him or maybe have a quiet word with the Chief Constable about the Honours List and the likelihood of his name being on it? Or to put it in the words of Sir Humphrey, is a cover-up desirable but not possible, possible but not desirable, or both possible and desirable?

When you return to your office you may discover that you need to deal with a Hackergram, or a note that's been popped on your desk – or even a phone call from your mother. Quite a few jokes have been put in for computer buffs, like Hacker being hacked or wondering why a computer's been named after the Kray twins. The conflicts between personal and public interests, and between the Cabinet and the Civil Service, are extremely well done. The tone of the TV series has been well-captured, giving not only laughs but an insight into the workings of government. Nor for nothing has the game been playtested by various civil servants and other political figures who also advise on the accuracy of the TV show.

The only worry has to be on the question of price. The game is undoubtedly fun while it lasts, but in 30 minutes you can be through all five days and even though you will want to play the game several times and it's different each time you play, the story choices are ultimately finite – how often could you watch the same TV episode without getting restless? Nicely packaged, well-written and a lot of effort has gone into it, but maybe it's a fiver too much in terms of value-for-money when compared with other more complex games that are around. Still a Yes to *Yes, Prime Minister*, but just for this Christmas it might be better to receive than to give!

Mike Gerrard

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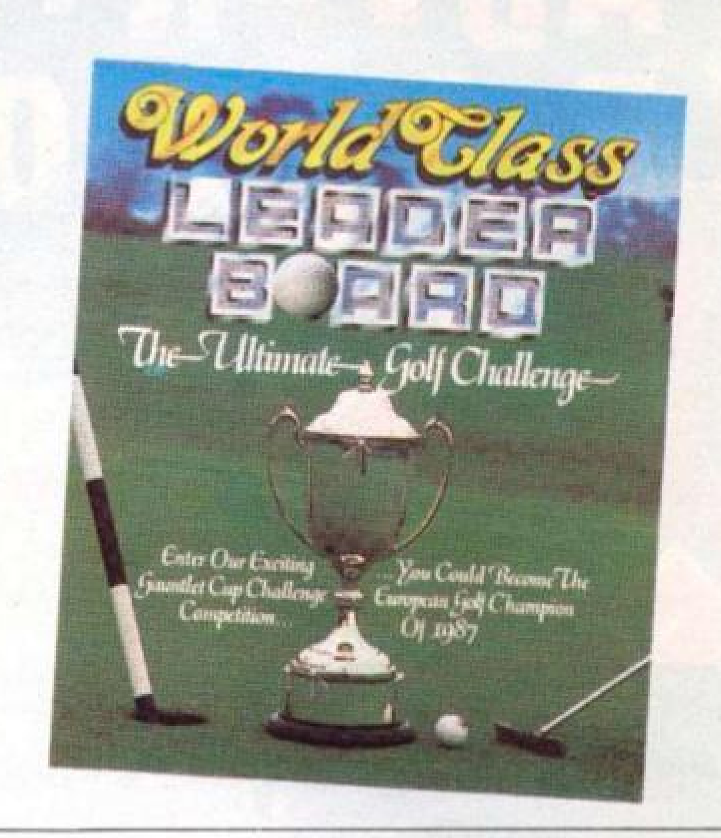
heads of a few players on greens to my right in more over-enthusiastic moments. On the other hand, one of these skewing effects might come in very useful for avoiding trees or balancing the effects of a severe wind.

The putting simulation on Leaderboard far outstrips that of any competitor. A little meter at the side of the screen helps you to judge the strength with which the ball needs to be hit but only for the first eight feet of the putt. After that you're on your own and it is not easy. The *YC* design editor cheerfully putted several 20-foot shots into lurking bunkers, so be warned (although it must be said that he was attempting the stroke with a 1 wood).

The graphics are inevitably not as good as those on the ST – the trees are a garish red and yellow for instance – but they are not half so bad as I thought they were until I realised that I had been playing for a couple of hours with the contrast button on minimum so causing my player to be indistinguishable from the bunkers into which I was falling with awesome regularity.

For a PC, however, the graphics are extremely realistic, a great credit to whoever wrote the conversion. If you have £25 to spend, buy this game.

Raphael Sergei



Outcast

Atari ST
£9.99
Publisher: Mastertronic

Even though you're a semi-mechanical insectoid, you're bored with being commanded by the Mind, the government of your race. You have decided to run away to start your own version of society, some place far away from Mind influence. To start with, you have populated a number of huge pyramids with larvae-stage offspring. When these reach full awareness they will form a new collective group . . .

The Mind does not take kindly to outcasts, however, and has sent a huge force to destroy you and the pyramids where the larvae are developing. You are going to have to protect the 'bases' so that your offspring can develop fully. As a result you will then be able to take on the Mind on your own terms. And you, yourself, are going to have to survive.

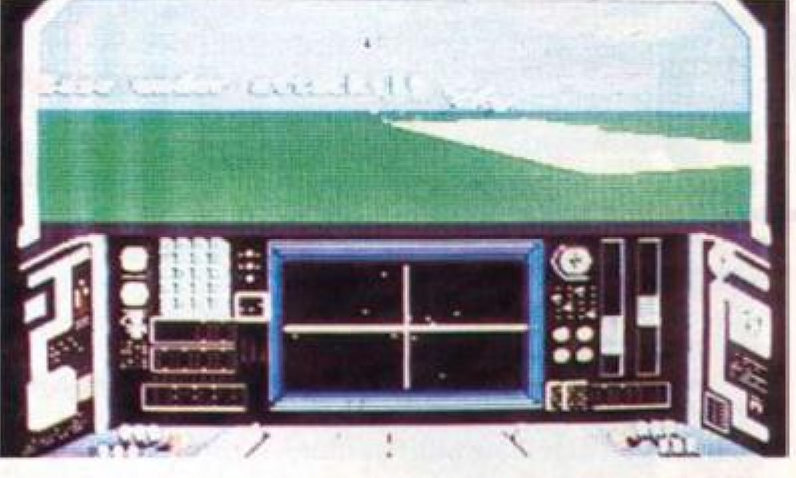
The pyramids double as bases for you to get repairs and receive more fuel. You will have to make sure that your docking computer is on, though, as failure to do so could have disastrous results.

The display on the bottom of the screen shows your shield situation, fuel leve, scanner, and altitude. Your speed is also shown, although it isn't used much in the game.

Although the plot is rather heavy reading, the only real idea is to survive. You do get a rating at the end of the game, ranging from lesser space cadet to experienced expert, which does add a little addictiveness. Otherwise the game is plain shoot 'em up in the Elite mould.

The graphics on the ships and the panel are adequate, but I found the backgrounds rather dull. The in-game music is short and very repetitive, so the toggle key proved handy. Unfortunately, the sound effects aren't up to much either. 'Outcast' is a reasonable game, but it has an 8-bit 'feel' to it. The Atari ST is capable of much more even at this budget level. I really did expect to be more impressed – this won't hold the interest of even the most hardened arcade freak for more than a couple of hours.

Connor Meo





• This is what happened when our reviewer threw a brick at the screen of *Outcast* in frustration.

ADVENTURE PLAYGROUND

MIKE GERRARD EXPLAINS HOW THERE IS A LOT MORE TO A SUCCESSFUL GAME THAN JUST THE WRITING OF IT.



Discerning readers will have been casting their eyes for the past few months over Pete Gerrard's series on adventure writing, as well as my own recommendations on the many adventure writing utilities that are around. Did I hear someone at the back say there aren't all that many? Just *GAC* and the Gilsoft programs, you say? Well what about *Genesis*, *The Adventure Builder* and even for those with Spectrums and long memories, *The Dungeon Builder*? Ariolasoft's *Adventure Construction Kit* would suit those with a Commodore 64 and a yen for graphics-based fantasy-type adventures.

You could even use RamJam's *Biro* system if you asked them nicely and the planned adventure met with their approval. With promises of *GAC Plus* and ST and CP/M versions of *Professional Adventure Writer* as well, there can be no excuse for anyone not being able to write an adventure if they wanted to.

This state of affairs could go some way to explaining why my mail every week is guaranteed to contain at least two or three jiffy bags containing home-written adventures. The time seems right for some words of wisdom on the subject of what to do with your adventure when you've written it.

To go back further than that, some people write to me even before they've started the game, asking what I think of their storyline, asking what I look for in a good adventure, and also how to go out and market this as-yet unwritten product.

In fact there is often no point in sending me a storyline and telling me the planned adventure is going to be crammed with all kinds of devious and original problems. Sometimes I can see that the storyline is so unoriginal that the adventure is unlikely to be successful. Occasionally the storyline is well though-out and original and I can write back and tell the author that. But even the best storyline is no good unless the adventure itself lives up to it, so all I can really say is go away and write the adventure. And just because I think a storyline is bad doesn't mean that I should discourage the writer from going ahead with the game – it might prove brilliant, or it might prove brilliant to every other reviewer except me, so why just go by my opinion? If you believe in the idea strongly enough, go ahead and write it.

Please yourself

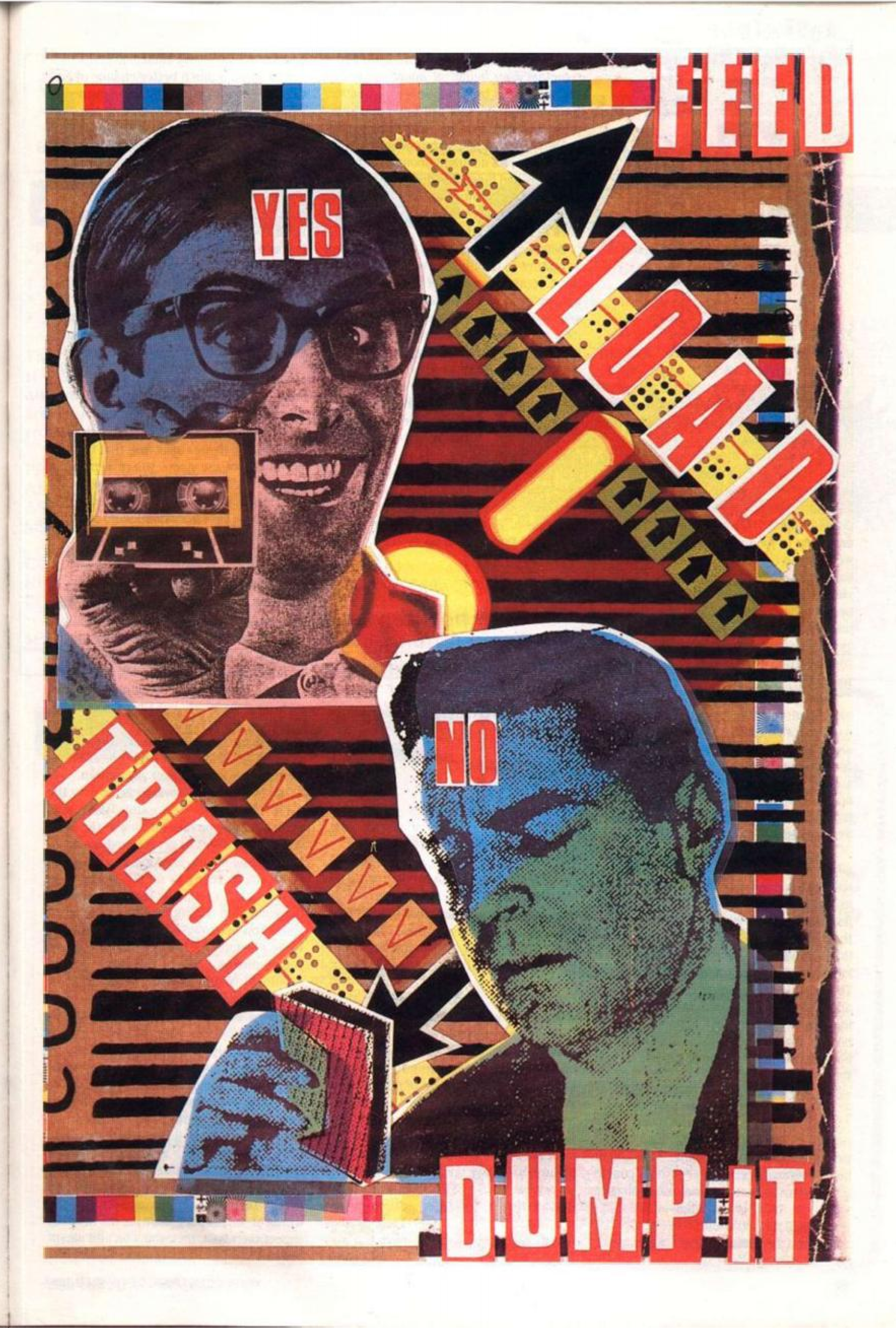
What I look for in a game is a question I often get asked and which I usually evade. You shouldn't be writing an adventure to please me, you should be writing it to please yourself. Your own standards are what matter, and that applies to any area, not just adventure-writing. I could say that I like ingenious problems – but then some problems are too ingenious and I dislike them. I could tell you that I like a good new twist on the maze theme – and then I'll dislike your maze because I find it impossible to solve. I could tell you that I tend to prefer text-only games provided the text is well-written – and then you can't sell your adventure because software houses want graphics. I could tell you that I don't mind seeing graphics in a game as long as they're good, add something to the game, and aren't occupying memory space which would be better given over to the text or the program – then after you do your arty best I'll complain that the graphics are terrible and a waste of space. So don't try to please me, just please yourself.

Marketing

People then ask how to market the game before they've even started writing it. I think it best to write the adventure first, or at least the bulk of it, before worrying too much about that. I don't have infinite amounts of time at my disposal (just infinite numbers of editors asking me where my copy is), so I don't like to think that I spend half an hour writing to you telling you how to market your game, only for you never to finish writing it because you get fed up or you discover it isn't quite as easy as you thought it would be.

One question guaranteed to annoy me is to which companies adventures ought to be submitted. Now if you're hoping to be a success in any area like this, you ought to know that there's something called Researching Your Market. If you want to write for magazines, for instance, you have to be familiar with the outlets open to you.

The same goes for adventure writing. If you want to write an adventure, presumably you must enjoy playing them, though from some letters I get you'd think people were totally unfamiliar with the adventure world. Someone recently asked me whether I thought Level 9 might publish their adventure (as-yet unwritten). Now all I can say is that they might. The odds are against it, however, because if you know your Level 9 you'll know they have written the vast majority of their games themselves. They did, however, publish


FEED
YES
LOAD
TRASH
NO
DUMP IT



Emerald Isle, which was not written by themselves, so there's always a chance that they might take your game, but it's only an outside chance and the adventure would have to be extremely good. Rather than ask me, though, you might get more information by asking Level 9 direct.

You should be buying adventures by these companies so that you're aware of the standard required, to give you some idea as to whether your own game meets that standard. Obviously it's very hard for any of us to judge our own work because we're much too close to it, but you can get some idea. If you buy the games then you should know the addresses or phone numbers of the companies, but it's hardly my job to search them out for you. It doesn't say much for your skills as an adventurer if you can't find out a company's address for yourself!

Each of the companies will have their own requirements, some of them perhaps not accepting games written using commercial utilities, so a stamped addressed envelope to them should get you the information you need. Firebird publishes a detailed list of its own requirements, and that should act as a good general guideline for submissions to other companies.

You shouldn't just be looking at the adventures published by the commercial software houses, though. Look at the ones available via mail-order, written by people just like yourself selling the games from their home addresses. There are plenty of these around and any decent adventure fanzine will keep you posted on them. Though there are some pretty awful efforts among them, the general standard is very high and there are some games which are better than many from big software houses, only the authors prefer to sell them themselves.

Prices

This also gives you some idea of the prices people are charging. One small software house recently sent me a couple of excellent adventures, but at £5.95 they were way over-priced when many companies sell two adventures on one tape for £1.95 or £2.95 now. I suggested a price reduction might be a good idea, and I'm pleased to say they agreed. There is a reluctance on behalf of many players to buy software by mail order, especially from individuals who are, after all, complete strangers to them. From time to time people do get ripped off by mail order companies, there's no doubt about it, although I think by and large this doesn't happen so much in the adventure world. Send off your money and you're likely to get your tape back pretty quickly.

Before we move from the unwritten adventure to the finished product, though, there comes the stage of play-testing and debugging. I can definitely tell you that if you send me your adventure and ask me to look for any bugs in it, you'll get it right back and probably with a grumpy reply if I got out of bed on the wrong side that morning. Maybe if there were 48 hours in each day then I might be prepared to have a quick look for you, but as a freelance writer who tries to make a living by being paid for what he does, I can't really spare the time to debug other people's adventures for them. The arrangement is that if you don't expect me to find the spelling mistakes in your adventures, then I won't ask you to find them in my articles.

"You're not likely to make your fortune, even if your adventure is accepted for publication."

What are your chances of getting a review then? Fairly slim in some magazines, more in others. In *Your Computer* the chances are unfortunately poor because we do try to cover both the fun and the serious side of all computers on the market, and space tends to be limited to the more important releases. I know your game is important to you, but we have to take into account its interest to the general readership.

Even in the adventure column that I write for another magazine, which only covers the Spectrum and in which the adventure section is six pages long, the chances of a review are still low. That's because there are dozens of people finishing adventures all the time, and there is only a certain amount of space available in which to review them. At any one time I'll have about 15 adventures in my in-tray and I'll have to choose the best half-dozen or so to review in the next issue. That leaves quite a few disappointed adventure-writers, but that's the way it is. There are also a lot of disappointed novelists, playwrights, musicians, artists and others around, so you're not alone.

You stand a much better chance of getting a review in an adventure fanzine, so make sure review copies go to all the ones you know about.

Presentation in this respect also counts for quite a lot. When I'm looking through the games on my desk trying to decide which to load up next, my eye will naturally be caught by the game with the best cassette cover or the most professional-looking and thorough instructions and introduction. Now I know as well as you do that it's the adventure inside that counts, but faced with a looming deadline and the choice between a nicely-presented game and a Boots C-15 tape with no cover and a scribbled note not even telling me the price of the game, which do you think I'll choose?

Submission

As to what you should submit: it is much appreciated if you check first that the specific copy of the game you're sending in does actually load. It is not unknown for people to send in hurriedly-finished adventures which have been duplicated on cheap equipment and the copies do not load. Try to put at least two copies of the program on the tape.

You should also enclose an introduction to the game's storyline, along with a complete solution – preferably in a separate sealed envelope to put the reviewer off peeking at it. Some people object to this practice and say that a reviewer should play the game as any other player would, with no help at all, but the reality of the situation is that a reviewer has a lot of adventures to get through and cannot spend several days on each one because trhe reviews would never get written.

My own way of working is to play the game 'blind' as far as possible, then when I can't get any further I'll look at the solution or help sheet to get me past the problem holding me up. Looking at a full sheet when you're ready to do the review also enables you to get some idea of the size of the game and the complexity of the problems. You get some idea of these aspects while playing, but if you've a feeling that you've almost finished the game after a couple of hours, then it helps to know whether there really are just two more locations to go, or whether the programmer's managed to cram so much in that you've scarcely started.

One final point, very down-to-earth but which many people don't realise: you're not likely to make a fortune, even if your adventure's accepted for publication. Adventures don't sell like arcade games – forget the Porsche, and count yourself lucky if you make enough to buy your next computer. Some people only make enough to buy their next *Your Computer!* In the words of the prophet: hope for the best but expect the worst, then you won't be disappointed.

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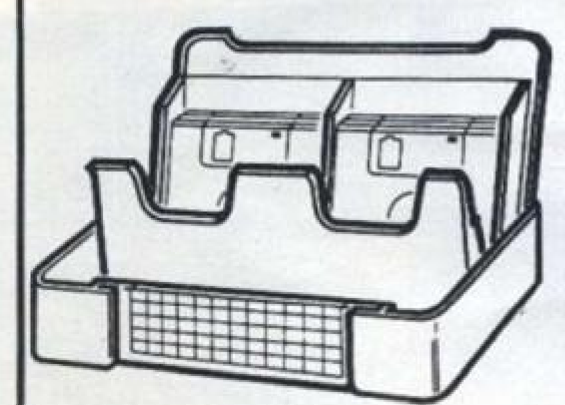
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TURNING THE SCREW

OUR SECOND ARCHIMEDES SOFTWARE REVIEW THIS MONTH IS A TOOLKIT MODULE BY CLARES. WILL IT DO MORE THAN ITS 8-BIT EQUIVALENT?

Acorn's newest micro, the Archimedes, has now reached the stage where software and applications are becoming readily available.

One useful application, released by Clares, is a toolkit module. It is aimed at experienced users and will interest those planning serious programming on the 32-bit micro. Many features you would expect to find on any toolkit, others are made possible by the processing speed of the Archimedes.

The heart of the system is the *MEMORY command, which enables the user to explore the computer's ample RAM. The software allows you either to browse manually, or to search automatically for the specific byte or string. When I read the manual I was rather surprised to learn that it was possible to switch the screen update on or off as it searched. I couldn't see how it could cope with displaying hundreds of screens of memory during searching without becoming unbearably slow but I soon discovered I was wrong as it fired screen after screen of memory at an astonishing rate.

All sorts of fascinating things are revealed when looking through the operating system. Messages of thanks, for instance, to people who participated in the production of the Archimedes. There were also a vast amount of error messages used for Basic, indicating the Archimedes' greatly extended error handling compared to its predecessor, the BBC micro.

Several formats of memory editor are available: hex, binary, text, mnemonics and 'words' (being a 32-bit machine, there are four 8-bit bytes in each 32-bit 'word').

The five editors are extremely useful as they can cover every different need. The Text mode is good for spotting strings,

```
*ENVIRONMENT
------------------
CURRENT ENVIRONMENT
------------------

Exit handler                         : 380A6D8
End of application workspace         : 0034000
Memory size                          : 0080000
Undefined instruction handler        : 3803584
Prefetch abort handler               : 3803808
Data abort handler                   : 3803844
Address exception handler            : 380387C
Error handler                        : 381ED3C
Error buffer                         : 0008300
Escape handler                       : 381ED28
Event handler                        : 3803540
CallBack register save area          : 380351C
CallBack handler                     : 00008CC
BreakPoint register save area        : 3803544
BreakPoint handler                   : 000090C
Unused SWI handler                   : 38002EC
Current MEMC state                   : 36E0D84
Floating point emulation             : Off

>
```

```
*HEX 8700
0008700  0D 00 0A 11 20 F4 20 3E 57 49 4E 44 45 46 53 37  ....  t >WINDEFS7
0008710  32 0D 00 14 25 20 F4 20 57 49 4E 44 4F 57 20 44  2...% t WINDOW D
0008720  45 46 49 4E 49 54 49 4F 4E 53 20 46 4F 52 20 41  EFINITIONS FOR A
0008730  52 54 49 53 41 4E 0D 00 1E 08 20 EB 31 32 0D 00  RTISAN.... k12..
0008740  28 19 20 EE 20 85 20 EB 31 32 3A FF 28 22 46 58  (. n . k12:.("FX
0008750  34 22 29 3A F6 3A E0 0D 00 32 49 20 4D 41 47 25  4"):v:`..2I MAG%
0008760  3D 32 3A 68 73 6C 25 3D 31 35 36 3A 68 73 6C 65  =2:hsl%=156:hsle
0008770  6E 25 3D 38 34 38 2F 4D 41 47 25 3A 76 73 74 25  n%=848/MAG%:vst%
0008780  3D 38 30 30 3A 76 73 6C 65 6E 25 3D 34 30 30 2F  =800:vslen%=400/
0008790  4D 41 47 25 3A 73 78 25 3D 30 3A 73 79 25 3D 30  MAG%:sx%=0:sy%=0
00087A0  0D 00 3C 0A 20 F2 76 61 72 73 0D 00 46 0E 20 DE  ..<. rvars..F. ^
00087B0  20 62 25 20 26 33 30 30 0D 00 50 0C 20 C8 99 20   b% &300..P. H.
00087C0  49 6E 69 74 0D 00 5A 14 20 2A 53 4C 4F 41 44 20  Init..Z. *SLOAD
00087D0  41 52 54 49 43 4F 4E 53 0D 00 64 0D 20 6F 67 63  ARTICONS..d. ogc
00087E0  6F 6C 25 3D 34 0D 00 6E 31 20 69 63 6F 6E 5F 62  ol%=4..n1 icon_b
00087F0  67 63 6F 6C 3D 33 3A 69 63 6F 6E 5F 66 67 63 6F  gcol=3:icon_fgco
0008800  6C 3D 31 3A 73 63 72 6F 6C 6C 62 61 72 5F 62 67  l=1:scrollbar_bg
0008810  63 6F 6C 3D 31 34 0D 00 78 33 20 64 65 73 6B 5F  col=14..x3 desk_
0008820  62 67 63 6F 6C 3D 32 3A 66 6F 63 75 73 5F 62 67  bgcol=2:focus_bg
0008830  63 6F 6C 3D 31 31 3A 6D 65 6E 75 74 69 74 6C 65  col=11:menutitle
0008840  5F 62 67 63 6F 6C 3D 31 32 0D 00 82 39 20 6D 65  _bgcol=12...9 me
0008850  6E 75 74 69 74 6C 65 5F 66 67 63 6F 6C 3D 31 33  nutitle_fgcol=13
0008860  3A 6D 65 6E 75 77 6F 72 6B 5F 62 67 63 6F 6C 3D  :menuwork_bgcol=
0008870  30 3A 6D 65 6E 75 77 6F 72 6B 5F 66 67 63 6F 6C  0:menuwork_fgcol
0008880  3D 37 0D 00 8C 27 20 64 69 61 6C 6F 67 75 65 5F  =7...' dialogue_
0008890  66 67 63 6F 6C 3D 31 33 3A 64 69 61 6C 6F 67 75  fgcol=13:dialogu
00088A0  65 5F 62 67 63 6F 6C 3D 30 0D 00 96 3E 20 F4 3D  e_bgcol=0...> t=
00088B0  3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D  ================
00088C0  3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D  ================
00088D0  3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D 3D  ================
>
```

and then you can place the software into Mnemonic mode and see the neighbouring disassembled machine code. By changing mode, it is possible to find the Hex or Binary equivalent.

MEMORY

Most memory editors default to a Hex display, a good general purpose mode. If you wanted to look at a block of pure data, such as the number of days in each month, you would probably use either this mode or the Word mode depending on your requirements. You would not use the Mnemonic mode though, because it would attempt to convert the data into assembler mnemonics and make a real mess of it.

Binary mode is another welcome feature. This can be used for many different things, such as spotting bit-masks, bit patterns, or even digital images. An example of bit patterns would be the use of character sets. Font characters would easily be spotted as a series of noughts and ones. Digital images could also be seen in the same way.

Animation could also make use of the Binary mode. Take, for instance, a succession of pictures which are produced and stored in the computer's memory. If the animation is run using a small program and something goes wrong, you could look at the address in which the pictures are held and, because it is in Binary mode, see the problem quite easily. You simply find the area you wish to look at in any mode and then toggle between any one to see your chosen line in any form.

If you know what you're looking for but don't know where to find it, the automatic search is more appropriate as it searches through in any mode for the pre-selected string.

The hex search allows you to search for a series of bytes in memory. As with most of the search commands, wildcards are accepted, making dubious memory examinations possible. The mnemonic search is a very useful feature, allowing you to search for actual mnemonics, that is disassembled machine code. Because of the precise nature of mnemonics, this search supports neither wild cards nor case insensitivity.

The text find and word find commands are similar to the other two. The text find can handle multiple wildcards. it can, in other words, search for a word containing an unstated number of unknown characters.

All of the utilities which make up the memory feature can also be applied to the disk drive, for seaching the disk instead of RAM. They perform exactly the same tasks in RAM as they do on disk.

Another welcome, if standard, feature is a disassembler but something I have never seen before is the one-line assembler. This is an invaluable element because it can save a lot of time when debugging ARM code. It enables the object code to be edited directly using the standard mnemonics but without leaving the toolkit environment. If you wish to modify part of the code, you can use this option to make an immediate alteration and then call the code, all without having to re-assemble the source code.

VALUES

The toolkit module gives the ability to alter some of the key setup values by means of the *CONFIGURE command. This is not to be confused with the normal *CONFIGURE command available in the Archimedes operating system. The Clares version is stored on disk instead of RAM and simply affects the module itself so that the new values are loaded in with the module.

Other features of the toolkit are merely advances of existing commands. *CATALL catalogues the entire disk, disregarding directories. *EXALL catalogues the entire disk but adds data such as the type of program, the time and date it was saved, the length and the position on the disk. *ENVIRONMENT is useful because it lists the current addresses of interesting operating system features, such as the end of application workspace.

The toolkit is not very user-friendly, but it is aimed chiefly at experienced users who know what they are doing. I was disappointed that there was not much to tell the Clares toolkit module from an 8-bit BBC; there were no high-quality graphics, nor was there tantalizing sound, and I felt that it was not making full use of the machine's capabilities.

There is nothing astonishingly new about it, but it will be precious to software developers, and some will regard it as a minimal standard. This is presumably the main reason such a complex system was brought out so early in the micro's development. Overall, I can't help wondering if it would have been worthwhile to wait a little longer.

```
==> Help on keyword GENERAL
Archimedes ToolKit Module v3.87 (16th September 1987)

*BIT <start> [[+]<end>]
*ENVIRONMENT
*HCOMPARE <start> [+]<end> <with>
*HEX <start> [[+]<end>]
*HFIND <hex list> [<address>]
*MEDIT [<address>]
*MFIND <mnemonic> [<address>]
*MNEMONIC <start> [[+]<end>]
*SHIFT <start> [+]<end> <destination>
*SWAP <start> [+]<end> <with>
*TEXT <start> [[+]<end>]
*TFIND <string> [<address>] [C]
*VIEW <filename>
*WCOMPARE <start> [+]<end> <with>
*WFIND <word> [<address>]
*WORD <start> [[+]<end>]


==> Help on keyword DISC
Archimedes ToolKit Module v3.87 (16th September 1987)

*AEDIT <drive> [<sector address>]
*AGET <drive> <start sector> [+]<end sector> <address>
*AHFIND <hex list> <drive> [<sector address>]
*AMFIND <mnemonic> <drive> [<sector address>]
*APUT <drive> <start> [+]<end> <sector address>
*ATFIND <string> <drive> [<sector address>] [C]
*AWFIND <word> <drive> [<sector address>]
*CATALL <drive>
*DIRALL <drive>
*EXALL <drive>

>
```

● **Left: *ENVIRONMENT lists current addresses of operating system features, and *HEX gives standard hex dump.**

● **Above: Useful on-line help reveals command syntax.**

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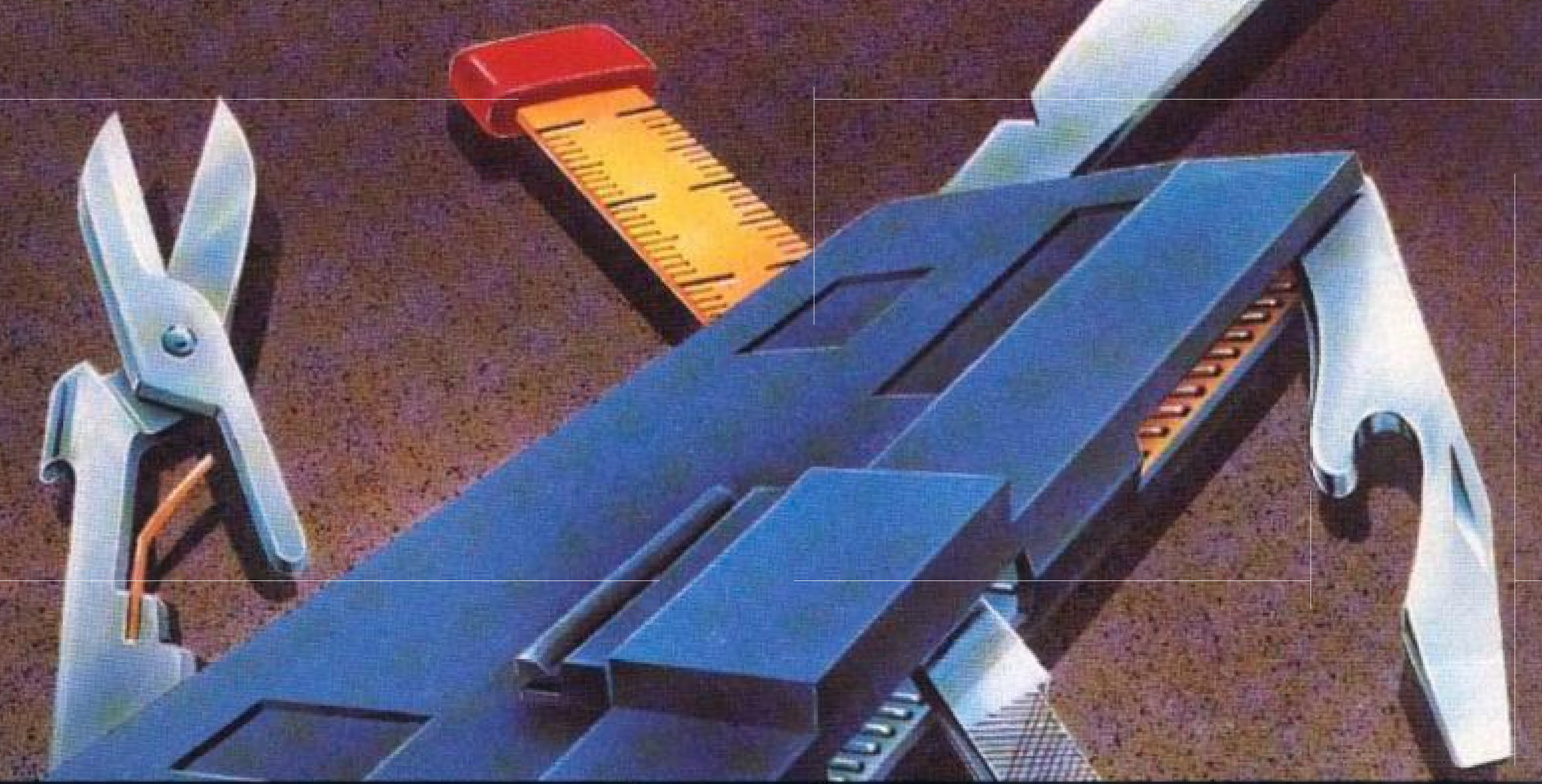
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